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May, 1954

SOAP *and* Chemical Specialties

formerly SOAP AND SANITARY CHEMICALS

On this issue...

Liquid detergents winning increased share of market

* * *

Do courts favor consumers in products injury suits?

* * *

New aerosol sales peaks charted in C.S.M.A. survey

* * *

Industrial weed control: chemical herbicides boom

Cover photo . . . "Sweetheart" line of toiletries launched with introduction of aerosol shampoo. Line marketed by Sweetheart Division (Boston), Manhattan Soap Co. Filled by Puritan Distributing, Boston. Container by American Can Company, New York.

No. 2 of a series

HAVE YOU A HERCULEAN TASK?

Hercules captures the Hind Stag of Acadia, after a full year's chase. Its horns were of pure gold, its hoofs of brass and it was sacred to the goddess Diana

To spend a full year in the completion of a task was no problem to Hercules, but the demands of modern competitive industry require far more rapid methodology. The D&O Product Development labs provide such individualized, short-cut solutions to a manufacturer's problems of deodorizing or reodorizing an industrial product or process. The laboratory approach is based upon recognition of the distinctive aspects of each separate problem, and developing a solution in accordance with these individual requirements. Consult D&O.

Our 155th Year of Service

D&O
ESTABLISHED 1798

DODGE & OLCOTT, INC. 180 Varick Street, New York 14, N. Y.
Sales Offices in Principal Cities

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • FLAVOR BASES • DRY SOLUBLE SEASONINGS

FULD BROS. INC.

fbi news

FOR THE SANITARY CHEMICAL JOBBER AND DISTRIBUTOR

PRODUCTS, PROSPECTS, TRENDS AND MARKETS

PUBLISHED BY FULD BROTHERS, INC., MANUFACTURING CHEMISTS • SANITARY CHEMICALS
702 S. WOLFE STREET, BALTIMORE 31, MD. • WEST COAST PLANT: LOS ANGELES 13, CALIF.

"Help!" Cried the Jobber.

And Fuld produced a wax stripper that even removes those hard floor finishes!

TWO TYPES

QUIK-STRIP
Ammoniated

The most powerful wax remover ever offered.

QUIK-STRIP
Plain

Does not work as rapidly as QUIK-STRIP Ammoniated. Recommended for use where ammonia odor is not desired.

QUIK-STRIP IS AVAILABLE UNDER YOUR PRIVATE LABEL.

It's Fuld's QUIK-STRIP Wax Remover. Lifts even the most difficult wax build-up that ordinary products will not strip.

Base boards, chair boards and other troublesome areas strip clean. *Really Clean.*

Special high powered QUIK-STRIP bids well to becoming the quickest moving money maker since Man-O-War.

Prices and samples are yours for the asking. Write Fuld Brothers, Inc., 702 South Wolfe Street, Baltimore 31, Maryland.

★ *QUIK-STRIP is also available from our Los Angeles plant.*

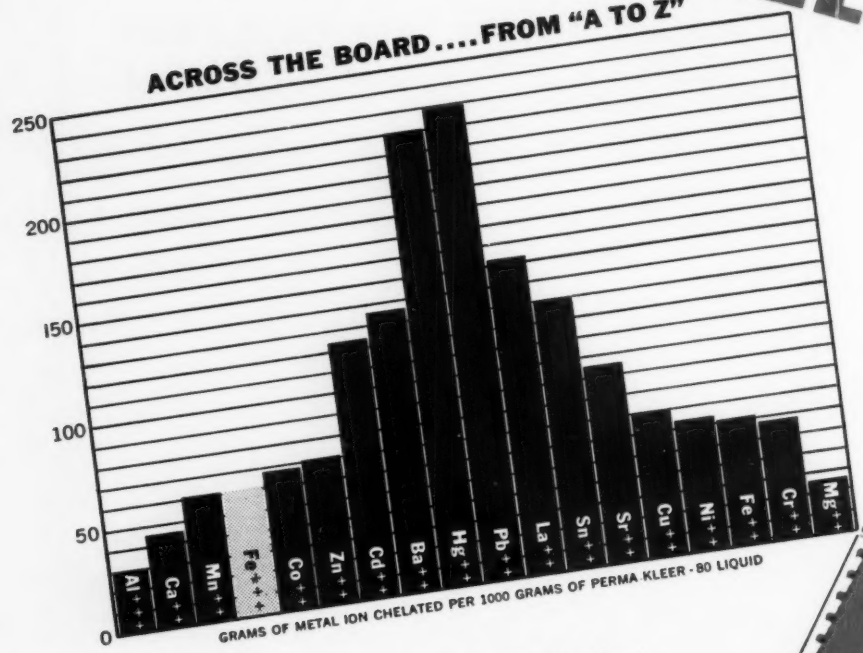
FULD BROTHERS, INCORPORATED

MANUFACTURING CHEMISTS
Warehouses in Principal Cities

702-710 S. WOLFE ST., BALTIMORE 31, MD.
West Coast Plant: Los Angeles, Calif.

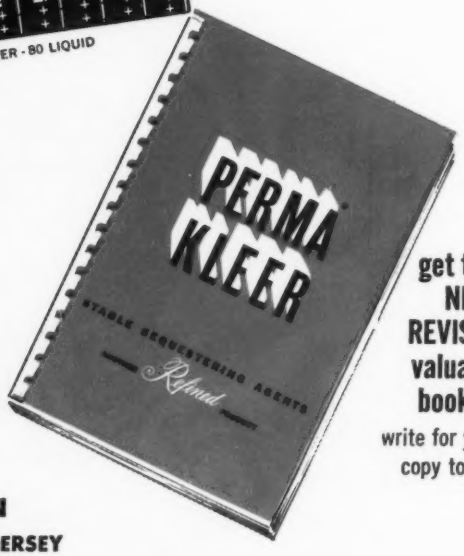
a new TOP in BALANCED CHELATION

ACROSS THE BOARD....FROM "A TO Z"



a new standard has been created in sequestration

From aluminum to zinc, PERMA KLEER-80 is 100% efficient in the chelation of most metal ions, including ferric, throughout the entire pH range. This "balanced chelation", plus the lowest cost per unit chelated of any organic sequestrant, make it the only answer to your hard water or trace metal problem.



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Volume XXX, No. 5 May, 1954

SOAP and Chemical Specialties

Formerly Soap and Sanitary Chemicals

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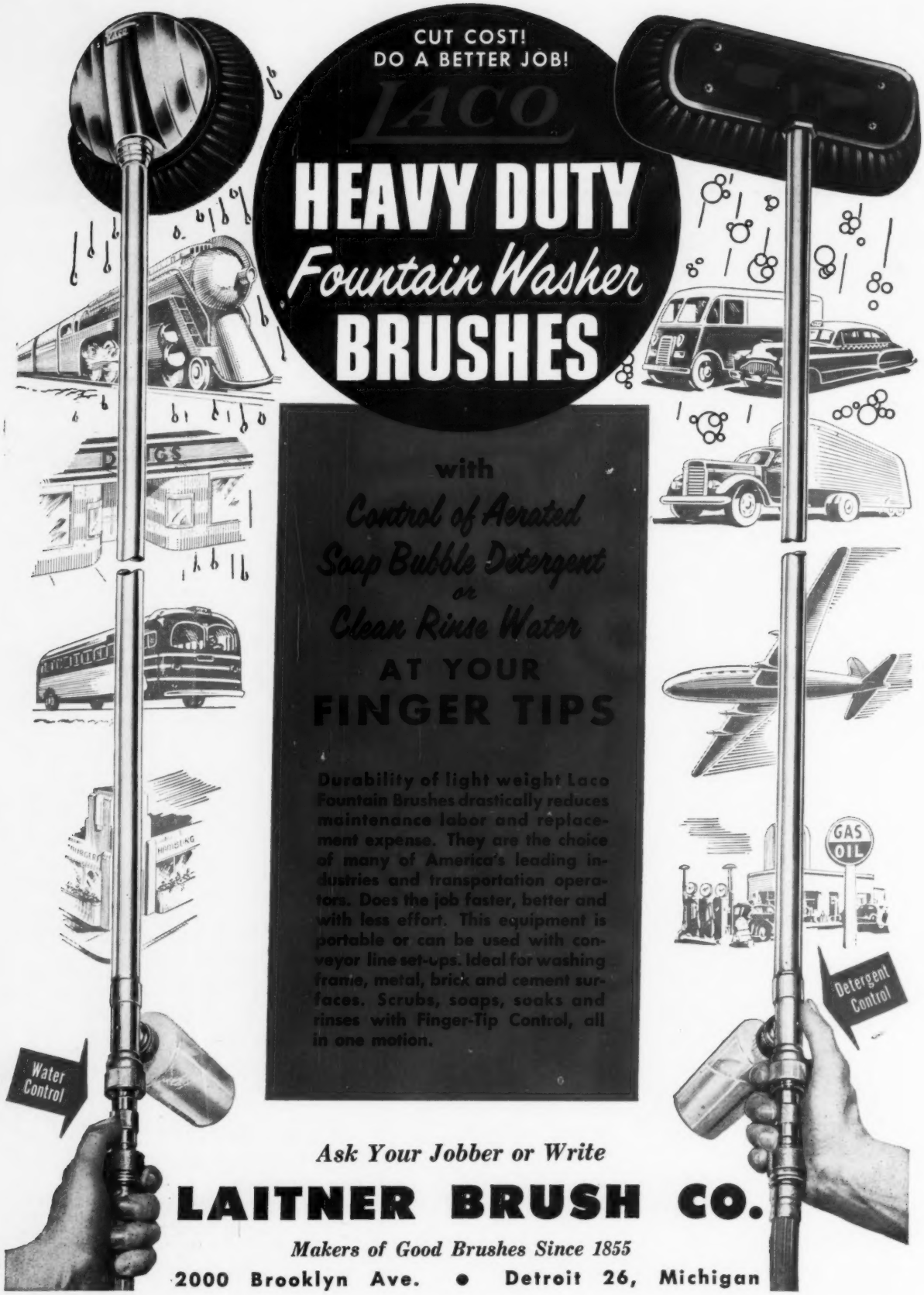
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DO A BETTER JOB!
LACO
HEAVY DUTY
Fountain Washer
BRUSHES
with
Control of Aerated
Soap Bubble Detergent
or
Clean Rinse Water
AT YOUR
FINGER TIPS
Durability of light weight Laco Fountain Brushes drastically reduces maintenance labor and replacement expense. They are the choice of many of America's leading industries and transportation operators. Does the job faster, better and with less effort. This equipment is portable or can be used with conveyor line set-ups. Ideal for washing frame, metal, brick and cement surfaces. Scrubs, soaps, soaks and rinses with Finger-Tip Control, all in one motion.
GAS
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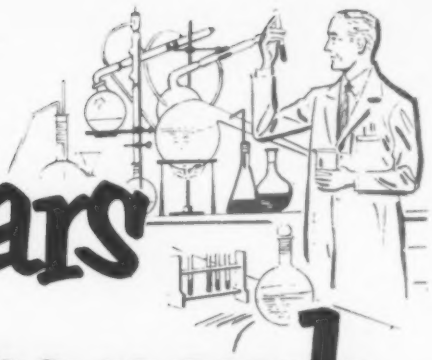
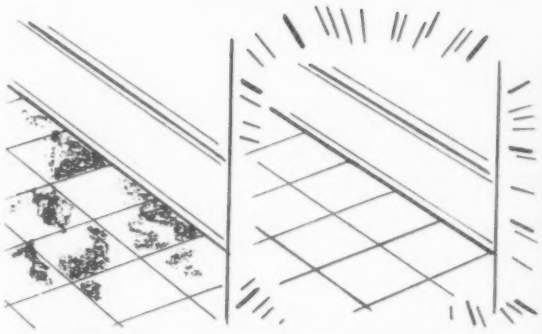
Water Control
Detergent Control
Ask Your Jobber or Write
LAITNER BRUSH CO.
Makers of Good Brushes Since 1855
2000 Brooklyn Ave. • Detroit 26, Michigan



out of 20 years chemical research comes a wax remover that really removes old oxidized wax!



BEFORE **AFTER USING WAX-RID**

No matter how many wax removers you have tried before without success, order WAX-RID with the full assurance that it must remove ALL accumulated blackened imbedded wax or you return the unused amount and WAX-RID costs you nothing. Unlike abrasive powders or alkali preparations, WAX-RID contains bland ingredients used to emulsify waxes. So in addition to its miracle wax removing potency ...WAX-RID IS GOOD FOR YOUR FLOORS.

Wax-Rid

Quickly rids floors and darkened baseboard areas of 5, 10, even 15 coats of oxidized wax without injury to asphalt tile, rubber, linoleum or composition.

Hysan **Products Company • 932 W. 38th Place, Chicago 9, Illinois**

CROWN SPRA-TAINER®

SWEEPS

The names read like "Who's Who In Shaving Creams." These are Crown customers, we're proud to say.

Also 12-oz. Professional Size *

Also 6-oz. Size*

Also 6-oz. Size*

Pressurized Shave Cream Field

SPRA-TAINER Does It Again!

SPRA-TAINER was born to leadership. Historically, it was the world's first lightweight pressurized container. Now it's "First Choice" with manufacturers in one industry after another. "No Top Seam, No Side Seam" construction provides surest product protection. Exclusive "Modern Design" commands the most attention, hence sells the most merchandise. SPRA-TAINER is but one member of Crown's distinguished family of finest quality cans. Our complete line offers progressive packaging to the many and diverse products of American industry. May we tell you about it in person? Just call or write.

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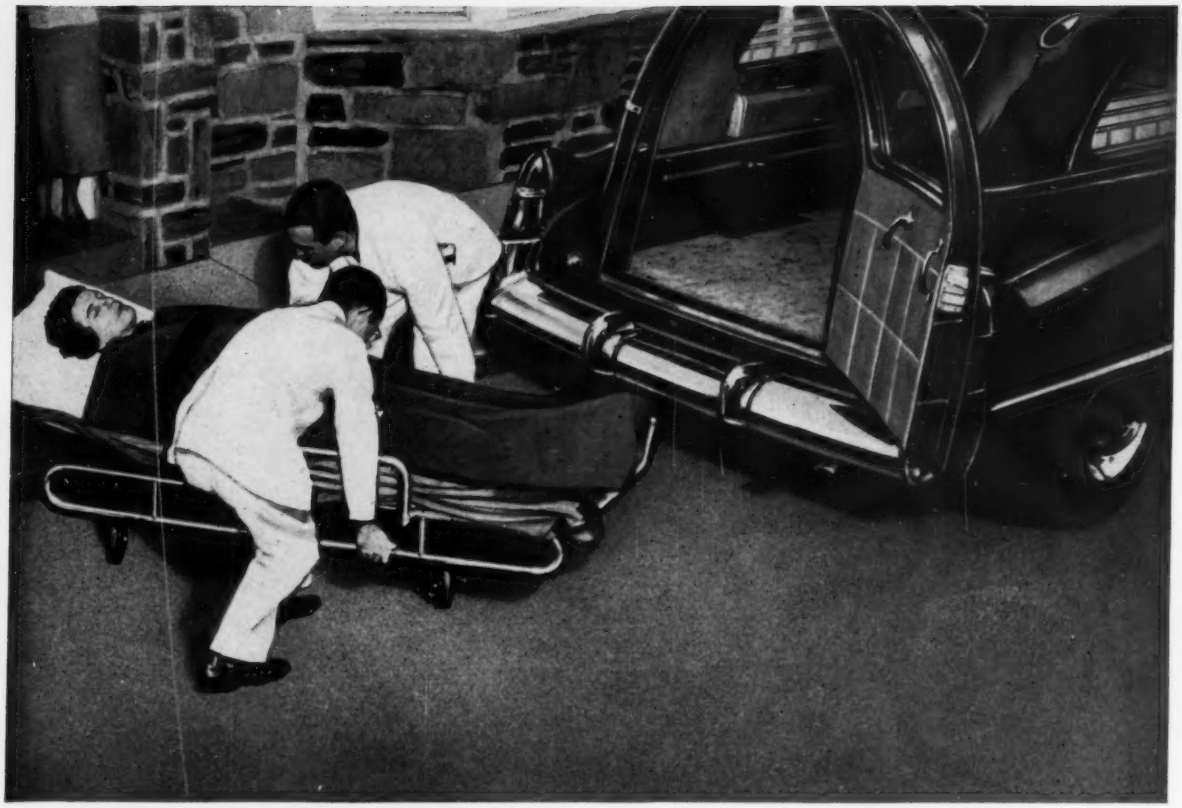
DIVISION

CROWN CORK & SEAL COMPANY, INC.

One of America's Largest Can Manufacturers

PHILADELPHIA · CHICAGO · ORLANDO · BALTIMORE
NEW YORK · BOSTON · ST. LOUIS



Did they pick her up from your customer's floor?

New CHECK-SLIP* floor care system combines safety, economy, non-glare beauty

Safety—Slipping on skiddy, waxy floors is a major cause of accidents in offices. These accidents are a headache to your customer and his insurance company—because they cost money and lower office morale and efficiency. *And they can cost you customers.*

You can effectively help reduce this accident hazard by offering the new CHECK-SLIP floor care system. CHECK-SLIP is a waxless coating with all the beauty and durability of the old-type finish but with none of its slipperiness and waxiness. It's actually LESS SLIPPERY THAN THE ORIGINAL TILE!

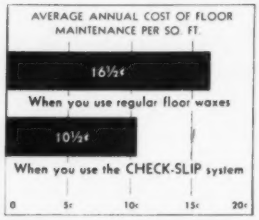
If you want to build bigger profit for yourself and lower costs for your customers, ask Hollingshead to send you the new CHECK-SLIP story that tells about "Lustre Without Slip —Protection Without Wax."

Industrial Division

R. M. Hollingshead CORPORATION

LEADER IN MAINTENANCE CHEMICALS

858 Cooper Street, Camden 2, New Jersey



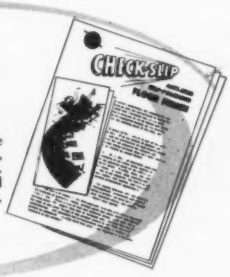
Economy—Chart compares total average annual cost (product plus labor) of maintaining floors using CHECK-SLIP versus regular floor wax. CHECK-SLIP is faster, easier to apply . . . requires fewer applications.

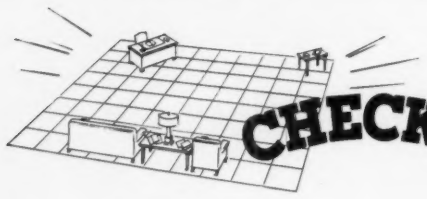
Non-glare Beauty—CHECK-SLIP gives floors a pleasing, attractive luster in keeping with the trend away from efficiency-lowering, high-reflectivity finishes. Employees find it easy on the eyes, safe to walk on.

*Specifically formulated for asphalt tile floors.

Find out today How CHECK-SLIP can bring you more profit, better-satisfied customers

This literature tells how to use 'Check-Slip' for greater safety, economy and beauty in office, building, store and industrial plants. Write for it today.





CHECK-SLIP *THE NEW WAXLESS FLOOR PROTECTION*

IT'S NEWS!

SALT-FREE LIQUID ALKYL ARYL SULFONATES IN A SINGLE LOW-COST OPERATION . . .

Ninol Laboratories Announces Revolutionary New Sulfur Trioxide Process

The time-honored method of manufacturing alkyl aryl sulfonates has been by the action of oleum on petroleum chemicals. Unfortunately, this produces unwanted salts along with the sulfonates; a separate process (which adds to product cost) has been necessary to remove these salts. In liquid cleaners especially, these salts, if not removed, cause difficulties by decreasing solubility, reducing clarity and sludging out in cold storage.

Now, after several years of development work, Ninol Laboratories offers a series of *salt-free liquid alkyl aryl sulfonates* made by the direct action of sulfur trioxide, thus producing pure sulfonates in a single low-cost step!

First members of this new series:

NINEX 300

A 60% active triethanolamine dodecyl benzene sulfonate, salt-free. Light amber, non-freezing liquid detergent for compounding high foaming liquid cleaners for car washing, dishwashing, etc.

NINEX 301

More concentrated form of NINEX 300, containing 80% active detergent.

NINEX 302

An intermediate molecular weight alkyl aryl sulfonate amine salt for use where greater solubility in acid or salt solutions is required for special compounding problems, as in phosphoric acid cleaners.

NINEX 303

Sodium xylene sulfonate. A salt-free 40% active solution, with powerful coupling and hydrotropic properties, for helping to dissolve sparingly soluble oils and solids in water. Used, for example, to help dissolve nonionic detergents in silicate solutions.

NINEX 304

Salt-free sodium dodecyl benzene sulfonate, 50% active. The most widely used base for the popular household liquid detergents. Absence of salts greatly assists compatibility with amide foam stabilizers and minimizes alcohol requirements for cold stability.

★ Write today for Samples and Data

NINOL **Detergents— —Emulsifiers**

SEND THIS COUPON NOW!

NINOL LABORATORIES, INC., DEPT. S,
1719 S. CLINTON ST., CHICAGO 16, ILL.

Gentlemen:
Please send working samples and data describing the following:

☐ NINEX 300 ☐ NINEX 301

☐ NINEX 302

☐ NINEX 303 ☐ NINEX 304

Signed _____

Co. _____

Street _____

City & State _____

NINOL LABORATORIES, INC.

1719 S. CLINTON • CHICAGO 16 • PHONE CHESAPEAKE 3-9625

In Canada: Chemical Developments of Canada Ltd., 420 Lagauchetiere Street W., Montreal 1, Quebec

CAND-DOX**

Candy's Wax with LUDOX* added

Candy's NEW NAME for the new floor treatment for Increased Anti-Slip Greater Durability Lower Floor Maintenance Cost

2 GRADES

CAND-DOX #CS
Originally offered as CANDY'S SUPREME Special WR-AS in July 1950

CAND-DOX #BB
Originally offered as BRIGHT BEAUTY Special WR-AS in June 1951

CAND-DOX #CS and BB are made in any total percentage of solids 8% to 18% and in 24% concentrate.

CAND-DOX #CS is slighty more durable and higher priced than CAND-DOX #BB in like percentage of total solids.

floor treatments represent the finest products available where a higher than minimum recognized standard of anti-slip quality is desired. The resultant films from the use of these products are *HARD*, non-tacky, and will withstand wear, dirt and discoloring traffic marks.

DURABILITY and ANTI-SLIP . . . CAND-DOX products include a compensating factor—LUDOX*—in itself harder than wax. The addition of LUDOX* to the proper wax bases, perfected purposely to accomodate this additive, causes a greater coefficient of friction and therefore greater safety underfoot.

WATER RESISTANCE and REMOVABILITY in proper balance are very important in every maintenance program. In the development of the wax emulsion bases that go into CAND-DOX floor treatments, the important all-around high qualities of our (Standard) CANDY'S SUPREME, BRIGHT BEAUTY and other well known and accepted waxes were taken into consideration and accomplished in the final CAND-DOX products containing the new bases plus additive.

BEAUTY of floors maintained with CAND-DOX floor treatments, which are both hard and very anti-slip, is no less than remarkable and equal to the lustre for which our products have long been famed. The same buffing can be applied, if desired, and the same gloss will result.

Our policy in regard to use of new additives to our floor waxes has always been clear-cut . . . if a definite improvement can be accomplished we endeavor to formulate and combine new ingredients in such a way as to *conform to our very high standards of product function.* These standards in no case are ever sacrificed to climb on any "bandwagon" of *sales* appeal.

The laboratory work in ours or any organization is very important and the starting point for research and development of new useful products. However, FIELD TESTING is the real proof of the real value of any floor treatment. CAND-DOX floor treatments have been thoroughly field tested and are now being sold in quantity by many of our distributors, with success—again proving merit in FIELD USE.

** CAND-DOX contains CANDY'S wax emulsion with LUDOX* colloidal silica in such proportion as to fully deliver the usefulness of this additive to floor wax. *Trademark of E. I. du Pont de Nemours & Co., (Inc.) Reg. U. S. Pat. Off. CAND-DOX is available for private brand resale and is sold only through distributors except for experimental accounts in Chicago essential to research.

Why not write us today for *free* samples and prices so that you can make your own FIELD TESTS?

The most complete line of water emulsion waxes of the highest quality available anywhere

CANDY'S SUPREME (Standard)
CANDY'S SUPREME Special WR
BRIGHT BEAUTY (Standard)
#CS CAND-DOX
#BB CAND-DOX

All the above CANDY products are listed by Underwriters' Laboratories as "anti-slip floor treatment materials."

Wax Specialists for over 60 years

Candy & Company, Inc.

2515 W. 35th ST., CHICAGO

all three with PLAXPAK® bottle

impulse appeal

Spectrum-wide choice of colors to spur sales at point-of-sale.

use appeal

Ease of squeeze dispensing to increase consumption at point-of-use.

repeat appeal

Use convenience and shelf-impact combine to foster brand loyalty.

The Plaxpak bottle "fights" for your product at the point-of-sale, re-sells it at the point-of-use and so brings customers back for more. Plax has unequalled experience in plastic bottle packaging—let us help you produce another merchandising success.

PLAX

PLAX CORPORATION

WEST HARTFORD, CONNECTICUT

PLAX CANADA, Ltd., Montreal & Toronto

Let us help you BUILD YOUR PROFITS FROM THE FLOOR UP!

Floor maintenance is big business. It is *our* business to make it BIG BUSINESS FOR YOU.
Leadership in pioneering new developments . . . new materials . . . new ideas in floor finishing products is part of our contribution to your sales picture. Typical is a team of two new Federal Products:

C.P.R. SEALER C.P.R. FINISH

- First major raw material development in 30 years
- Floors retain light color longer.
- Eliminate frequent stripping, sanding, and similar refinishing costs.
- Outstanding resistance to abrasion, wear, scuffing, rubber burning, cleansing materials, and commonly encountered chemical agents.

These superiorities provide your customers with an economy of maintenance that justifies a higher price and greater profit margin for you.

Samples and details will be sent promptly upon request.

Federal VARNISH DIVISION
2841 S. Ashland Ave., Chicago 8, Ill. *The Pioneers in Floor Sealers-- Finishes and Waxes*

This is one in a series of V-C Cleanser advertisements currently appearing in leading trade publications.

V-C Cleanser Advertising

Makes Profits for You

HERE'S HOW YOU PROFIT BY BEING A V-C CLEANSER DEALER:

1 **V-C Cleanser advertising makes your selling job easier.** V-C is actively and vigorously advertising V-C Cleansers to large-volume users. This campaign is reaching owners, managers and operators of businesses in your own community, and is helping V-C Cleanser Dealers everywhere to sell more V-C Cleansers.

2 **You get higher mark-ups on V-C Cleansers.** This is possible because V-C mines and manufactures most of the raw materials that are used in cleaning compounds. V-C's savings on raw materials mean extra dollars for you.

3 **Your customers get highest-quality cleansers.** V-C Cleansers are specially-formulated to make cleaning easier, faster, more economical. And they are granulated to prevent caking or dusting. These are benefits your customers can see and measure in terms of cleaning costs. This means repeat business for you.

For complete details on how you can become a V-C Cleanser Dealer, mail the coupon below. Without obligation, find out how you and your customers clean up with V-C Cleansers!

VC CLEANSERS ®

Chemicals Division • Virginia-Carolina Chemical Corporation
401 East Main Street, Richmond 8, Virginia

Please send me complete details on V-C Cleansers and your profit plan for dealers. I am chiefly interested in cleansers for: ☐ The food serving industry. ☐ Maintenance cleaning in industries and institutions.

NAME_____

FIRM_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

For value in full measure

Value is measured not only in quality and uniformity but in service as well. You get full value in all three when you use Nialk chemicals.

for instance...

NIALK CAUSTIC POTASH: This product, always uniform in quality, has long been an important aid to soapmakers in developing improved processing techniques for soap products of every description.

The value to industry of this and other **NIALK** products is created not only through constant research and strict quality control but also through fast, safe delivery and close attention to industry's needs.

NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, New York

Nialk®

- LIQUID CHLORINE
- CAUSTIC POTASH
- CARBONATE OF POTASH
- PARADICHLOROBENZENE
- CAUSTIC SODA
- TRICHLORethylene

NIAGATHAL (TETRACHLORO PHTHALIC ANHYDRIDE)

Feature PURO DEODORANTS

for Quality that Builds Customer Satisfaction and Repeat Profits

★

More Economical . . . Longer Lasting

★

100% Pure Paradichlorobenzene Fused with Fine Perfume Oils

★

Attractively Packaged

★

Pleasing Scents Assure Repeat Sales

★

A Complete Line for Every Purpose

PURO 4 OZ. DEODORANT BLOCKS

Outstanding Seller For Every Public Use

Most popular size and shape, for urinals and general use. Made to U. S. Navy specification MIL-D-2178. Attractive cellophane wrap and special tube containers protect from evaporation. Available in pleasant Surf, Lilac and Rose colors. Economical—long lasting.

PURO SANA-BOLE DEODORANT

Extra Profits From This Exclusive Specialty

Banishes odors at their source. Patented "Snap-on" wire hanger holds cake securely in bowl and practically out of sight. Delicate flower-like fragrance. Ideal for home, hotel, and public toilets—a much larger market than urinal blocks. A sensational repeater, 4 oz. cake.

PURO JUMBO DEODORANT BLOCKS

Heavy Duty Hanger Blocks

By popular demand, now available in 8, 12, 16 and 24 oz. cakes which are effective longer over a larger area. The three larger blocks come in convenient hanger containers. Cellophane wrap prevents evaporation before use. In clean-smelling Surf, Lilac and Rose.

THE Puro COMPANY, Inc.

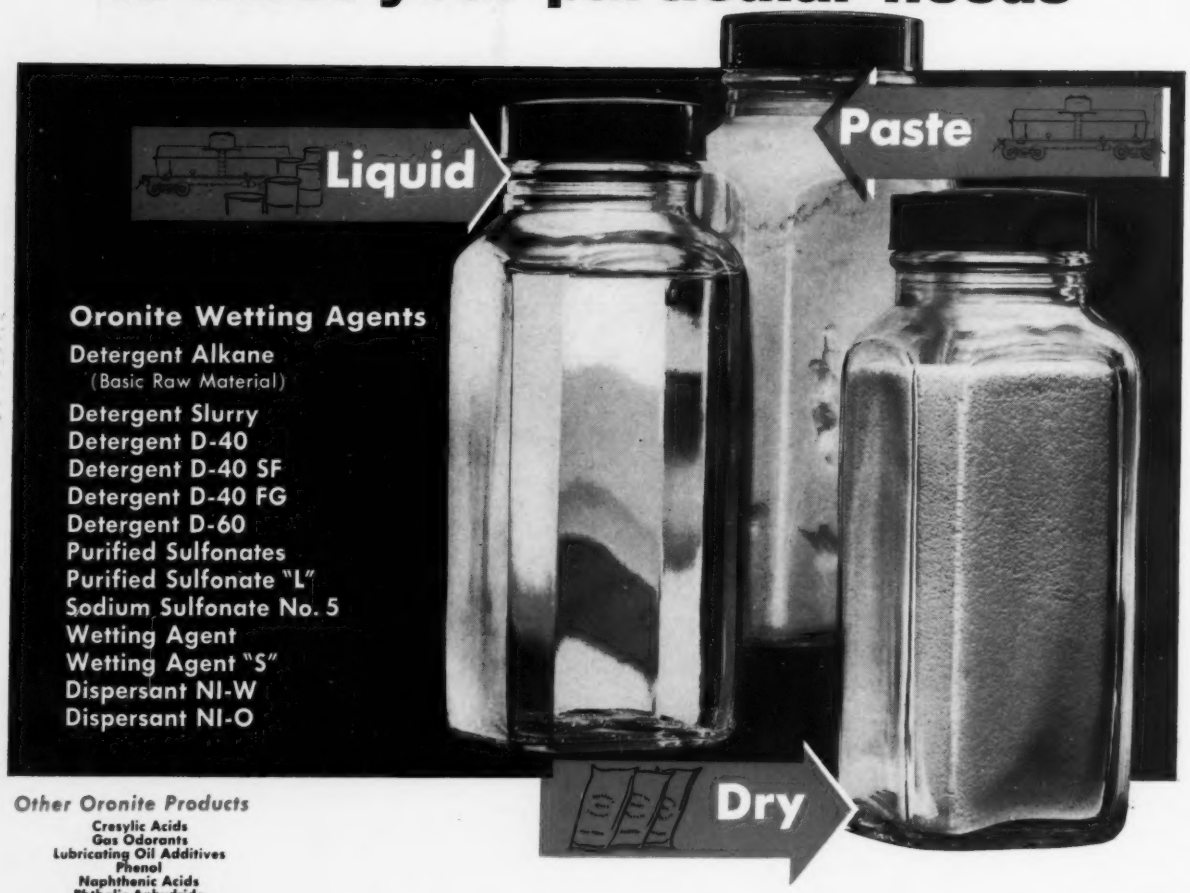
(Established 1929)

2801 LOCUST STREET • ST. LOUIS 3, MISSOURI

Write for Samples And Jobber Prices

wetting agents

to meet your particular needs



Oronite Wetting Agents

Detergent Alkane
(Basic Raw Material)
Detergent Slurry
Detergent D-40
Detergent D-40 SF
Detergent D-40 FG
Detergent D-60
Purified Sulfonates
Purified Sulfonate "L"
Sodium Sulfonate No. 5
Wetting Agent
Wetting Agent "S"
Dispersant NI-W
Dispersant NI-O

Other Oronite Products

Cresylic Acids
Gas Odorants
Lubricating Oil Additives
Phenol
Naphthenic Acids
Phthalic Anhydride
Maleic Anhydride
Para-Xylene 95%
Ortho-Xylene
Xylol
Aliphatic Acid
Acetone
Hydroformer Catalyst
Dispersant FO
(Furnace Oil Inhibitor)

ORONITE CHEMICAL COMPANY

Whether you require the basic raw material, wetting agents in intermediate form or finished products—it will pay you to investigate the complete Oronite line. Oronite wetting agents are priced competitively and have the high quality and uniformity you expect from the world's largest producer of synthetic detergent raw materials.

Why not talk over your needs with an Oronite detergent specialist? Write or phone the Oronite office nearest you for technical bulletins or request a personal call.

"The world's largest producer of synthetic detergent raw materials"

ORONITE CHEMICAL COMPANY

38 Sansome St., San Francisco 4, Calif. • 714 W. Olympic Blvd., Los Angeles 15, Calif.
30 Rockefeller Plaza, New York 20, N. Y. • 600 S. Michigan Ave., Chicago 5, Ill.
Mercantile Securities Building, Dallas 1, Texas

2876

After Closing . . .

Ungerer Sales Manager

Stuart Goodwillie has been appointed general sales manager of Ungerer & Co., New York, according to a recent announcement by Kenneth G. Voorhees, president of the company.

Stuart Goodwillie

Mr. Goodwillie for the past 11 years has been a sales executive with Sylvania Electric Products, Inc., New York. His other experience over the past 25 years includes associations with Du Pont and management consulting firms specializing in marketing and distribution. He is a graduate of Dartmouth College and lives in New Canaan, Conn.

W. A. Bush, formerly general sales manager for Ungerer, continues as secretary of the firm and will engage in special sales work and sales research.

—★—

Krentzman Joins Puritan

The aerosol filling division of Puritan Distributing Co., Boston, has just announced the appointment of Harvey C. Krentzman as assistant to the president. Mr. Krentzman is also an instructor in sales management at Boston University. A member of the board of the American Society for Quality Control, he is also a member of the Harvard Engineering Society. He was formerly associated with General Electric Corp. and Keystone Camera Co. Mr. Krentzman is a mechanical engineering graduate of Northeastern University and holds a master's degree in mechanical engineering from Harvard and an MBA degree from Harvard School of Business.

—★—

New Coast Syndet Plant

The opening of a plant for the manufacture and compounding of dry and liquid synthetic detergents was announced recently by the newly established California Chemical Co., Santa Rosa, Calif. Edward G. French is the firm's president.

—★—

C-P Shifts Lampe

Robert J. Lampe has been transferred to the home office of Colgate-Palmolive Co., in Jersey City, N.J., and appointed director of sales training of the industrial sales department, it was announced recently. Prior to his transfer to Jersey City, Mr. Lampe had been industrial sales supervisor of the Chicago industrial division, a position to which he had been appointed in January, 1951.

Mr. Lampe was graduated from Xavier University, Cincinnati, in 1938, with a B.Sc. degree. He joined the industrial sales department of Colgate-Palmolive Co. in 1947, and worked as an industrial salesman in southern Ohio, parts of Kentucky and West Virginia until he was named to the Chicago industrial division in 1951.

Most of his time will be spent in the field working with industrial sales personnel.

Robert J. Lampe

Paul F. Hoglund

Du Pont Advances Hoglund

Paul F. Hoglund has been put in charge of sales of silica products by Grasselli Chemicals Department, including "Ludox" colloidal silica, it was announced recently by E. I. du Pont de Nemours & Co., Wilmington, Del. He succeeds Harold H. Snyder, who has become a member of the industrial chemicals sales section of the Grasselli Chemicals Department.

A native of St. Croix Falls, Wis., Dr. Hoglund received the degree of bachelor of arts in chemistry from Augustana College, Rock Island, Ill., in 1941 and that of doctor of philosophy in electrochemistry from the University of Wisconsin in 1945. He joined Du Pont in 1944 as a junior chemist at the Grasselli experimental laboratory in Cleveland, Ohio. He became assistant plant engineer at the Grasselli, N. J., works in 1948, and was assistant technical superintendent of the Houston, Tex., works from 1949 to 1952. Since then he has been a senior sales development and service representative with Grasselli in Wilmington.

R. W. McClintock Dies

Ralph W. McClintock, president of Mac-Lac Corp., New York, for the last 30 years, died recently. He was 72 years old. He succeeded his father, Frank F. McClintock, as head of the firm. Ralph McClintock was a former president and director of the American Bleached Shellac Manufacturers Association and the United States Shellac Importers Association.

—★—

Colgate's Income Up

A $2,629,000 increase in world-wide sales for the first three months of 1954 was announced last month by Colgate-Palmolive Co., Jersey City, N. J. Net income was up $180,000 for the same period. The report to the stockholders by E. H. Little, chairman of the board, revealed that net income for the first quarter of 1954 was $3,455,000 or $1.38 per share on the 2,428,000 shares of stock outstanding. This compares with $3,275,000 or $1.37 per share earned in the first quarter of 1953 on the 2,312,000 shares then outstanding.

Domestic sales amounted to $67,652,000, as compared with $70,000,000 in the first quarter of 1953. World-wide sales, including sales of foreign subsidiaries not consolidated, totaled $107,849,000 for the first quarter of 1954 and $105,220,000 in the corresponding period of 1953.

Net income for the first quarter includes dividend income from foreign subsidiaries of $190,000 in 1954 and $546,000 in 1953. Actual earnings of foreign subsidiaries for the three months were $2,464,000 in 1954 and $2,255,000 in 1953.

—★—

Schneider on Alcolac Board

Election of Richard B. Schneider, vice president in charge of the chemical department, Empire Trust Co., New York, to the board of directors of American Alcolac Corp., Baltimore, was announced recently by Vova Blinoff, Alcolac president.

—★—

George S. Sloss Dies

George Stuart Sloss, 56, general sales manager of a janitorial supply firm, died in Los Angeles last month. A native of Richmond, Va., he had lived in Los Angeles for the past twenty years.

Water-Soluble Rodenticide

Motomco Inc., New York, recently introduced "Pivalyn", the water soluble sodium salt of "Pival" anti-coagulant rodenticide. The new derivative is available to the PCO in units of 100 at 20 cents per packet and in units of 200 at 18 cents per packet. One packet dissolved in water makes one quart of liquid bait, said to be sufficiently mold resistant to remain intact for three or four weeks without need for replacement.

—★—

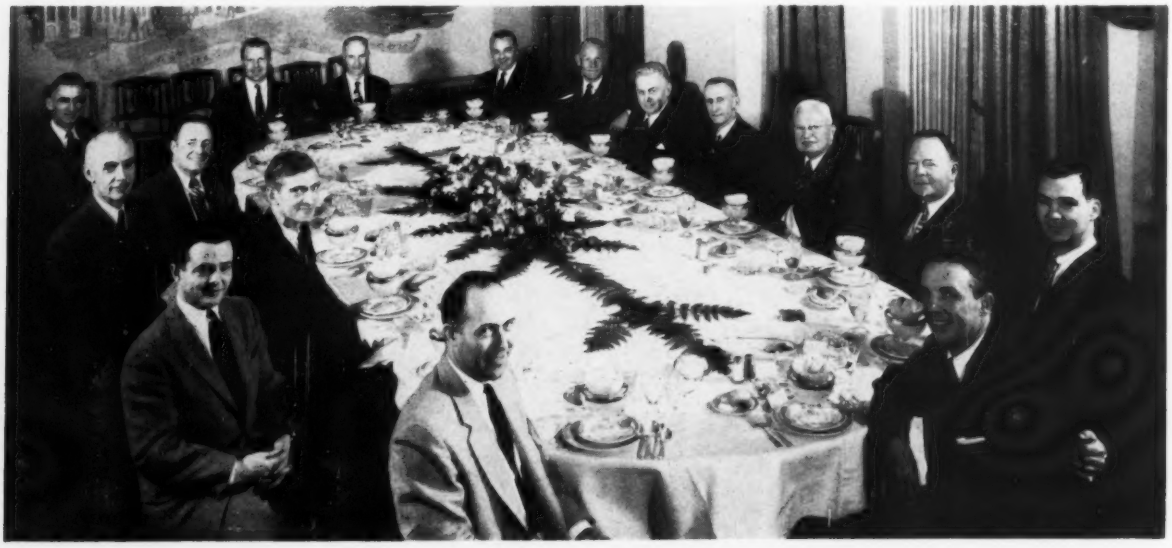
Am. Dispenser Names Rep.

American Dispenser Co., New York, appointed Bardwell Products Co., Dallas, Tex., as sales representative for its line of soap dispensing equipment, it was announced recently by Burton L. Feinson, general manager of American. The Dallas firm will cover the sanitary supply trade in Texas, Oklahoma, Arkansas, Louisiana, and Mississippi. D. Bardwell is president and Art Touceda, vice president, of Bardwell Products Co.

—★—

Joseph Burwick Dies

Joseph Burwick, founder of American Sanitary Products Co. and American School Supply Co., Denver, died recently in that city. He was 70 years old. Survivors are a son, Leo, and a daughter, Mrs. Gladys Kamm, both of Denver.



Testimonial dinner to A. R. Penfold, director of the Museum of Applied Arts and Sciences of Sydney, Australia, winner of the 1954 annual gold medal and $1,000 Fritzsche Award, given recently by F. H. Leonhardt, chairman of the board of the donor firm, Fritzsche Brothers, Inc., New York. Seated around the table (reading from right counter clockwise) D. A. Neary, Fred Leonhardt, Jr., John H. Montgomery, Mr. Leonhardt, Mr. Penfold, Dr. Ernest Guenther, H. P. Wesemann, John L. Cassullo, G. A. Wohlfort, Arthur J. Hemminger, Fred Richter, R. W. Wilmer, Dr. E. H. Hamann, E. E. Langenau, Robert W. Montgomery, Ellis Merkl.

AOCS Elects Officers

C. E. Morris, Armour & Co., Chicago, was elected president of the American Oil Chemists' Society at

W. A. Peterson

the group's annual meeting held April 12 to 14 in San Antonio, Tex. E. M. James of Lever Brothers Co., New York, was chairman of the election committee. Other officers for the current year include W. A. Peterson, Colgate-Palmolive Co., Jersey City, N.J., vice-president; R. W. Bates, North American Laboratory Service, Chicago, previously with Armour, treasurer; A. F. Kapecki, Wurster & Sanger, Inc., Chicago, secretary. Three members at large elected at the meeting are: H. C. Black, Swift & Co., Chicago; J. J. Ganucheau, Southern Cotton Oil Co., Gretna, La.; and J. C. Konen, Archer - Daniels - Midland Co., Minneapolis. The officers and members at large serve as the governing board of the society with the most recent past presidents: Procter Thomson, Procter & Gamble Co., Cincinnati, 1953; E. M. James, Lever Brothers Co., New York, 1952; J. R. Mays Jr., Barrow-Agee Laboratories, Inc., Memphis, 1950; and V. C. Mehlenbacher, Swift & Co., Chicago, 1949 who will hold over for one year on account of the death of A. E. Bailey, Humko Co., Memphis, 1951.

The winners in the society's annual Smalley collaborative check sample work were announced by Mr. Bates, chairman of the Smalley committee, which had sent analytical samples to more than 100 chemists. In the tallow and grease series first place was won by H. C. Bennett, Los Angeles Soap Co., Los Angeles, Calif.; and second by J. S. Boulden, Lever Brothers Co., Baltimore.

Procter Thomson, 1953 president of the AOCS gave the annual presidential address.

—★—

Hollingshead Income Drops

A decline in net income to $15,354 for 1953 from $263,388 for 1952 was reported early this month by R. M. Hollingshead Corp., Camden, N. J. A drop in sales volume of two Hollingshead divisions in the last quarter of 1953 resulted in a decline in sales to $14,120,582 in the year 1953 from $15,141,761 in 1952. The reduced income for 1953 was due to large cash expenditures for additions and replacements necessitated by the firm's expansion program, according to Wilbur H. Norton, president, who said that exclusive of abnormal non-recurring adjustments, operating profits for the year approximated those of 1952. Continued expenditures are planned in 1954 for completion of a new power plant, additional mechanization of materials handling, and automatic filling equipment.

Construction on a new plant in Sunnyvale, Calif., will begin in mid-1954. In addition, the firm has purchased ten acres of land in Hammond, Ind., where construction of a new manufacturing unit is planned within the next few years, Mr. Norton stated.

—★—

Cuts Carbowax Prices

Price reductions of five cents per pound for "Carbowax" methoxy polyethylene glycols 350, 550, 750, and 1250 were announced recently by Carbide & Carbon Chemicals Co., Division of Union Carbide & Carbon Corp., New York. Current price schedules, f.o.b. South Charleston, W. Va., run as follows per pound: tank car lots, 29 cents; carload lots in drums, 30½ cents; less carload lots in drums, 31 cents.

New Bobrick Dispenser

A new low-price, chrome-plated dispenser, capable of handling all powdered soaps, including

New Powdered Soap Dispenser

some hand cleaners with lanolin, was announced recently by Bobrick Dispensers, Inc., Brooklyn, N.Y. "Bobrick 38" features an adjustable output-per-stroke valve, finger-tip control offset from push-up valve which is said to minimize spillage, and an apron protecting the valve against water splash. Model 39 resembles 38 except for a chrome plated metal globe.

—★—

Colgate Freehold Plant

A new $7,000,000 plant will be built at Freehold, N.J., by Colgate-Palmolive Co., Jersey City, N. J., it was announced recently. Colgate is planning to erect the plant on Route 33 in Freehold Township, N. J., on a 104-acre tract owned by the Pennsylvania Railroad. Nearly 1400 persons are expected to be employed at the new Freehold plant.

—★—

SAACI Dinner Meeting

The Salesmen's Association of the American Chemical Industry held its Chemical Progress Week dinner May 19 at the Toots Shor Restaurant in New York. Special guests included prominent baseball figures who spoke on the season in prospect. The SAACI choir sang.

Colgate 1953 Sales at Peak

World-wide sales of Colgate-Palmolive Co., Jersey City, N. J., reached the record level of $405,390,000 in 1953, E. H. Little, chairman of the board, announced late last month in the company's annual report. Domestic sales increased $11,733,000 over 1952 to $257,394,000 and sales of foreign subsidiaries of $147,996,000 were up $12,374,000.

Net income for 1953 was $12,045,000 or $5.02 per share of common stock as compared with $10,084,000 or $4.38 per share in 1952. Domestic earnings of $8,467,000 were $388,000 higher than the preceding year. Dividend income from foreign subsidiaries which are not consolidated totaled $3,578,000 in 1953 as compared with $2,005,000 in 1952.

On the basis of including total net income of foreign subsidiaries, world-wide earnings were $17,259,000 or $7.28 per share in 1953 and $14,616,000 or $6.44 per share in 1952. The undistributed earnings of foreign subsidiaries were retained abroad for working capital, plant expenditures and other purposes. In certain countries, exchange restrictions continue to apply and all earnings could not be remitted at this time in any event, Mr. Little stated.

Regular quarterly dividends totaling $3.50 per share on the preferred stock and $2.00 per share on the common stock were paid during 1953. As in each of the preceding three years, a 5 percent stock dividend was declared in addition to cash dividends of $2.00 per share.

In commenting on domestic operations, Mr. Little said that the sales improvement was due primarily to increased sales of the company's synthetic detergents. Profits on soap and detergent operations were considerably improved over 1952 reflecting higher sales and improvements in manufacturing facilities. Sales of the firm's toilet articles were reported to be about the same as the preceding year with profits somewhat lower. This was attributed to intense competition and important developments in dentifrices. The results of clinical tests of the company's anti-enzyme ingredient were so impressive with respect to the reduction of tooth decay that, in 1953, Colgate converted its entire production of dental cream to the new formula.

Colgate's plant additions in 1953 amounted to $10,436,000, the report stated. A new soap warehouse at Jersey City and synthetic detergent plant at Jeffersonville, Ind., are under construction and will be completed in 1954.

—★—

Jackson Succeeds Abbott

W. Ward Jackson has been named vice president of Commercial Solvents Corp., New York, it was announced recently by J. Albert Woods, president. In his new position, Mr. Jackson directs the firm's petrochemicals division. Previously he was general manager of CSC's industrial chemical sales department, a unit of this division. With CSC since 1951, Mr. Jackson served during World War II in an advisory capacity.

Mr. Jackson succeeds Abbott K. Hamilton, who resigned from his position as vice president and director of Commercial Solvents Corp. and president and director of Commercial Distillers. He had been associated with CSC and its predecessor companies for twenty seven years. Mr. Hamilton will resume the activities of A. K. Hamilton & Co., Inc., of which he is president and owner.

W. Ward Jackson

Expands Detergent Output

Monsanto Chemical Co., St. Louis, Mo., is constructing facilities which will approximately double its production of detergent-dispersant additives for lubricating oils, it was announced recently by John W. Newcombe, petroleum chemicals sales manager for the firm's organic chemicals division. The additional capacity is being built at the division's W. G. Kummrich plant in Monsanto, Ill., and is expected to start operation in September of this year.

Detergent oil additives, which primarily reduce the buildup of engine deposits, are used in blending the so-called heavy duty lubricating oils used by automobile manufacturers and motorists.

—★—

Barr New York Area Plant

The establishment of a new research laboratory and the opening around June 1 of an aerosol packaging plant in the New York area were announced recently by G. Barr & Co., Chicago. The new research facilities at the company's plant in Chicago will provide the firm with 1500 square feet for aerosol research and product development. Morris J. Root, formerly assistant research director of Rayette, Inc., St. Paul, has been named technical director of Barr. Horizons, Inc., Cleveland, has been engaged by Barr for research and consultation on aerosol products.

Richard Neiss, formerly an engineer with Precision Valve Co., Yonkers, N. Y., is in charge of engineering for the new Barr plant in the New York area.

A three year fellowship grant by the Barr company at Michigan State College's department of chemistry, under the direction of Dr. Lawrence Quill, head of the department, was also announced.

Recent appointments to the staff of the Barr company include Richard Helwig, plant engineer and Gene Riegler, who will act as a consultant to the company and its customers on alcohol and Treasury Department regulations.

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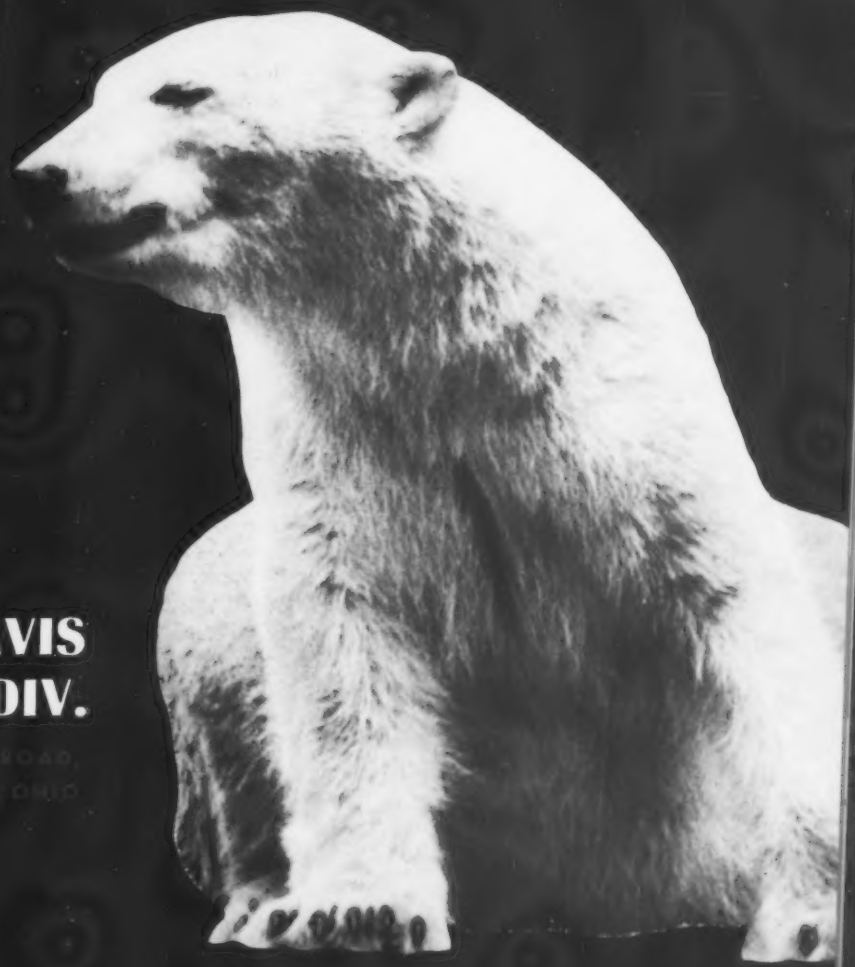
Hiltamine **arctic white BP** substantive to cotton and rayon



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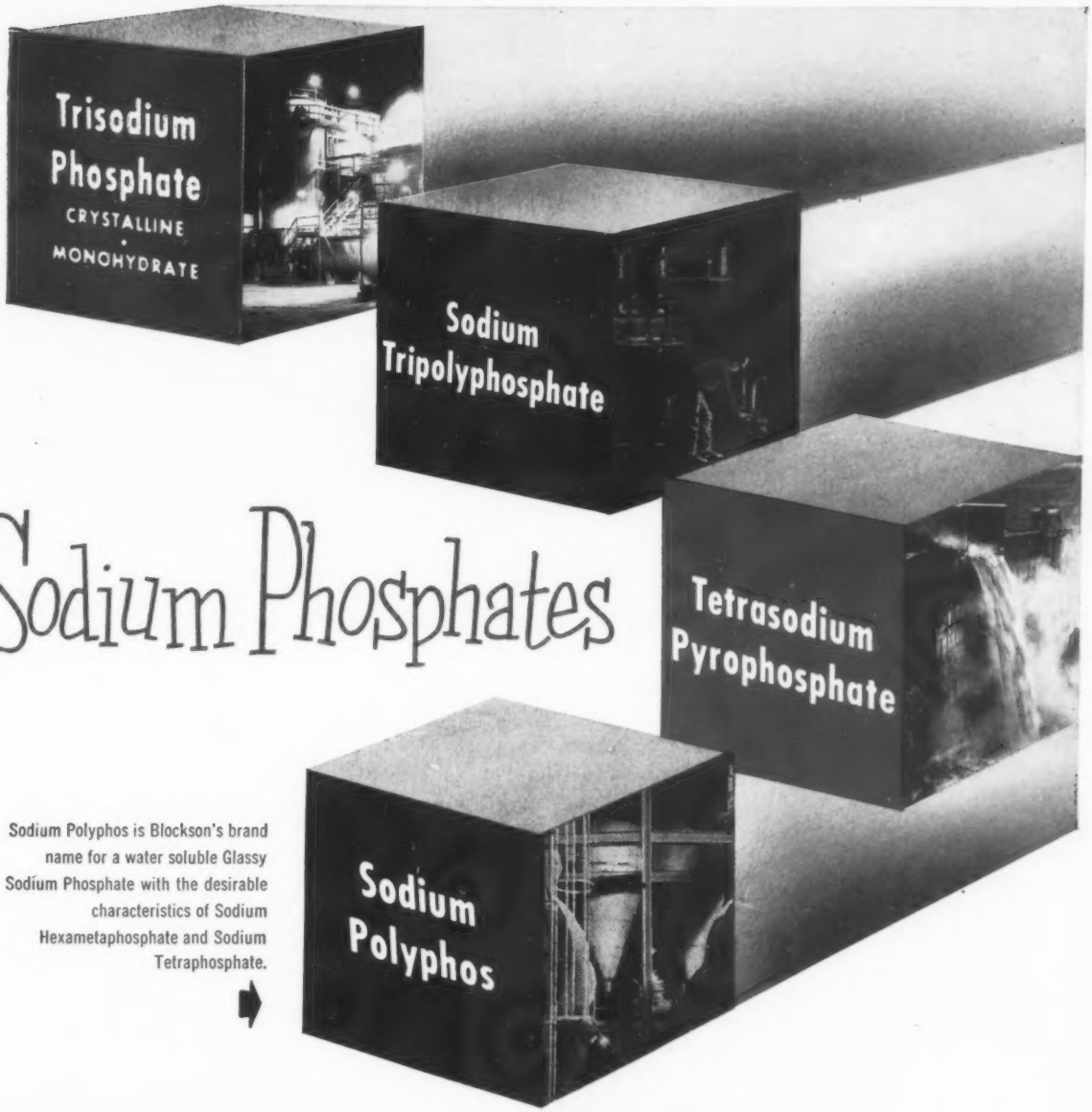

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Splendid wax at an economy price. Ideal where waxing is frequent.

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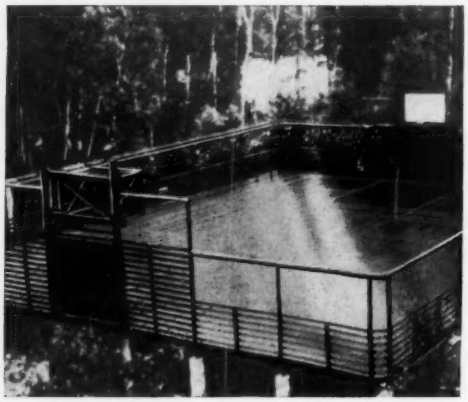

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LINSEED											
Water White	X	X	X								
Regular	X	X	X	X	X	X		X			
SM-500	X	X	X	X	X	X		X			
SM-600	X	X	X	X	X	X		X			
Essential Unsaturated Free Fatty Acids											X
SOYA											
Water White	X	X	X								
Regular	X	X	X		X	X		X			
RO-4	X	X	X		X	X		X			
RO-10	X	X	X	X	X	X	X	X	X		
RO-11S	X	X	X		X			X			
MIXED VEGETABLE RO-8	X	X		X	X	X	X	X	X		
CORN-SOYA Double-Distilled				X		X	X	X	X		
CORN Double-Distilled				X		X	X	X	X		
COTTONSEED Double-Distilled		X			X		X	X	X		
CHINAWOOD	X	X	X								

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Announcement....

With this issue, our former name, "Soap & Sanitary Chemicals" has been changed to

SOAP and CHEMICAL SPECIALTIES

The purpose of the change has been to select a title which more accurately describes the field covered by the publication.

During recent years, the advent of newer detergents, other surface active agents, a greatly widened market for aerosol products, and an expanded output of new automotive chemical specialties,—to name a few,—have broadened the field of the magazine beyond the limitations of "soaps and sanitary chemicals."

Basically, there will be little change in make-up or editorial content of SOAP and CHEMICAL SPECIALTIES. It will continue to serve the sanitary chemical field and the soap industry as it has in the past. Its circulation will comprise essentially the same readers whom it has served in recent years. Its aims and policies will remain as they have been for 29 years past. Only the name has been changed.

We are deeply appreciative of the support which we have received from our industry and hope that SOAP and CHEMICAL SPECIALTIES will continue to warrant its continuation for many years to come.

The PUBLISHERS

by Ira P. Mac Nair

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CHEMICAL PROGRESS WEEK—MAY 17-22

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...about detergents

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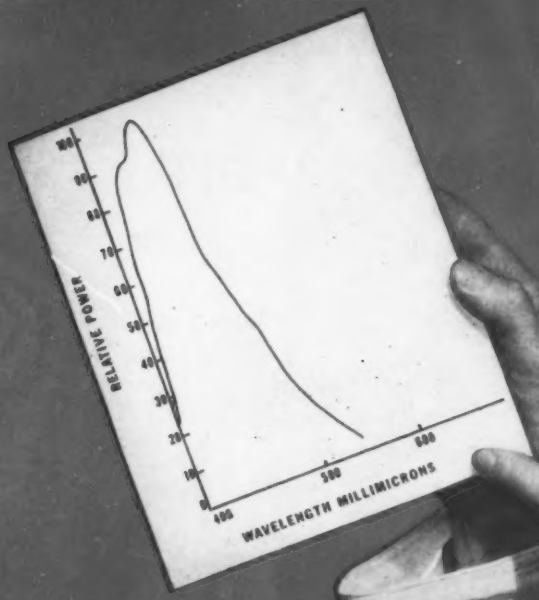

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CALCOFLUOR WHITE 2R Conc.	slightly reddish blue	good	slight yellowing	cotton, viscose
CALCOFLUOR WHITE M2R Super	slightly reddish blue	fair	whitens	cotton, viscose
CALCOFLUOR WHITE SD	neutral blue	fair	strong whitening	nylon, acetate, wool, orlon
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CHEMICAL PROGRESS WEEK-MAY 17-22

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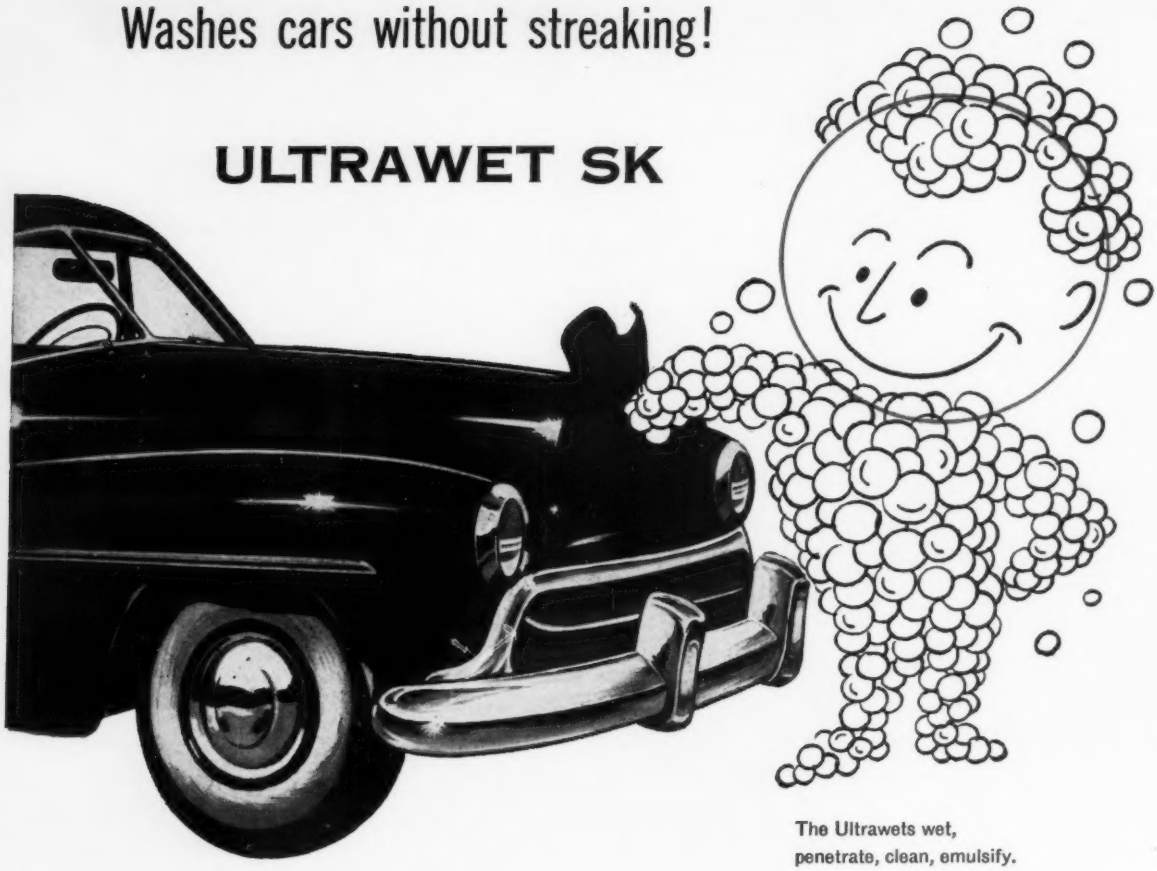

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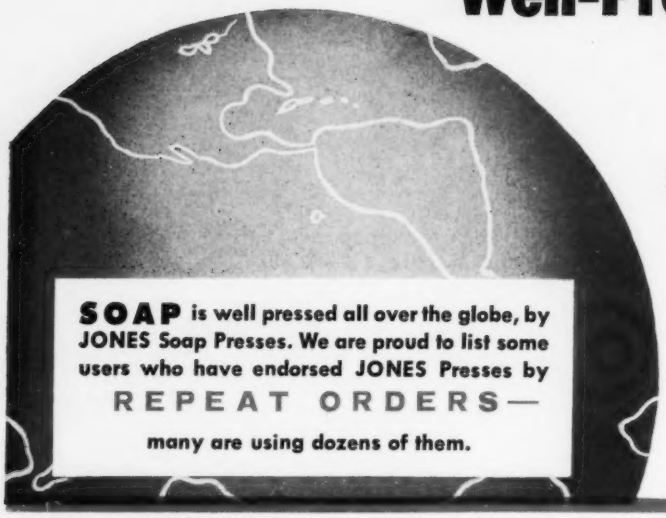

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Cartoning Machines — Soap Presses

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. . . in brief

as the editor sees it . . .

NAME CHANGE . . . . With this issue, we have changed our name to *Soap and Chemical Specialties*. The new title more accurately describes the broader field which the magazine covers today, marks the expansion which has taken place in recent years in the new age of household and industrial chemical specialties, notes the long list of newer detergents, aerosol products, automotive chemicals and others. The field has widened from its former "sanitary chemical" limitations, although these still comprise a large segment of the market and will receive as close and broad attention in our pages as they always have.

Basically, there will be little change in the content or make-up of the magazine. It will cater to the same readers it has served in recent years and continue to cooperate closely with industry groups in the field. In short, the general aim and purpose will be just about the same as they have been for close to thirty years. Only a new name which we believe tells better what the magazine contains, what it is all about, what it is today.

NO ALARM . . . . After studying the problem for a year in England, the conclusion has been reached that the growing use of synthetic detergents presents no immediate cause for alarm to users of public health services particularly sewage works and drinking water supplies taken from rivers. These were the findings of the Committee on Synthetic Detergents appointed by the Minister of Housing and Local Government just about a year ago. The Committee continues to make further studies.

An interesting point in the report has to do with complaints of corrosion of domestic plumbing. These may grow out of the ability of synthetics to remove old films of grease and insoluble soap curd and expose corrosion previously hidden, according to the report. As for the foam nuisance at sewage works, this still exists and is something of a pain in the neck to operators. To this latter problem the Committee is now searching diligently for a solution. We hope that they come up with one before their work is ended. But, in the meantime, we want to add our small voice that there is no immediate cause for alarm.

WHY ASK? . . . For years, a great controversy has raged among salesmen as to whether they should or should not come right out and ask for the order. The "no-ask" boys maintain that the buyer who does not know why a salesman is calling on him does not exist or is just a goon who wouldn't buy anything anyway. They also hold that by asking for the order, the prospect has a chance to say "no" and the interview is ended. The ask-for-the-order gang spurn any such delicate finesse. The buyer knows why the salesman is there, so if he doesn't proffer the order voluntarily, be blunt and ask for it, they hold.

These two schools of thought long have argued their points in the sanitary supply field. Successful selling and hard experience stand on both sides of the question. Hot words have been exchanged on the subject, but any unanimity of opinion still seems to be on the distant horizon. The majority, we would guess, belongs to the

"ask-for-the-order" clan, but the calibre of some of the "no-ask" fraternity leaves us still uncertain. At the same time, we seem to drift along with the majority. What does a salesman make calls for? Exercise?

WAX VINYL FLOORS . . . . Since vinyl floor coverings were first brought to market a few years ago, over 50,000 pieces of literature on how, when and where they should be waxed have been distributed to floor covering dealers, maintenance people, and others interested in floor care. When manufacturers announced that vinyl needed no waxing, the threat to the future of all floor waxes was quite obvious.

A defense to this threat was spearheaded by the Chemical Specialties Manufacturers Association. Through its efforts, research was undertaken to establish the truth or falsity of these no-wax claims for vinyl floorings. When the results showed conclusively that such floors when unwaxed were more vulnerable to marring and wear, these facts were coordinated and broadcast where they would do the most good. All told, over 50,000 reports, booklets and the like were sent out, and we feel, did a convincing job.

Here, we think, is one of the best pieces of specific evidence of what a trade association can do for its members which we have encountered in many a year. It is a very practical example of why trade associations are so vital in business today, — and also a mighty strong argument why no firm, no matter how small or unimportant, should fail to belong to the association of its industry. So we offer exhibit "A" on why we should support our trade association!

FRICTION . . . . Are there more dissatisfied sales executives and salesmen today than ever before, or does it just seem that way? In cases where the selling is tougher than in the lush days of war-time, when "allocation" of materials rather than sales was the rule, management in some firms feels that salesmen are not what they once were. "Order takers" is the way they describe post-war sales operatives who are failing to bring in orders of the size and with the speed they once did. Older salesmen, that is, those who sold before World War II, tend to express their contempt for their fellow juniors in the same way.

Complaints that management itself may be responsible for some sloppy business thinking and habits, also war induced, are beginning to be heard from sales executives and salesmen, who are growing restive as business appears to taper off. They indict management for bringing in executives from other industries who lack the necessary specialized background and experience to plan current activities or for the future.

Perhaps it would not be amiss for those firms where friction between mangement and sales executives seems to be growing to make a study of the whole question. The salesmen might be right.

CONFUSION . . . When a dozen leading American toilet soaps fail to make the "recommended" list in a recent survey by one of the consumer advisory outfits, we imagine that a lot of people found themselves slightly confused. Some housewives who dote on this "consumer advice" stuff are going to have a tough time of it buying soap for their families. Practically every brand, ordinarily seen on the shelves of the average supermarket, is not recommended. Only two soaps succeeded in getting on this particular "recommended" list, a low cost "complexion soap" and a well-known true castile.

When we consider why most of the recognized top quality soaps failed to be "recommended,"—free fatty acid slightly above P-S-621c, coconut oil too high, water insoluble matter too high, rosin present,—we wonder just how sincere is this effort to guide the consumer. To us, the survey and its advice to the down-trodden consumer are just some more of the same old hogwash, a lot of hair-splitting nonsense which is certain to be meaningless or confusing to the uninformed.

For her dollar, the American consumer gets about top value in toilet soap and particularly among most of those which the author of this study did not include as "recommended." The fact that many of these are nationally advertised brands makes us wonder if this "survey" with its obvious absurdities and omissions has the earmarks of the old Commie propaganda line,—or are we just unduly suspicious?

as the reader sees it...

Likes Toxicity Articles

Editor:

We found the article "Toxicity of Soaps and Detergents" by Louis Barail which appeared in the April issue very interesting. We understand that in the May issue there will appear an article dealing with the toxicity of surface active agents. Please send us reprints of the two articles when they are available.

Albert Musher, President
Aveeno Corp.,
New York City

—★—

We regret that it will be necessary to postpone publishing Dr. Barail's article on "Toxicology of Surfactants" until our June issue. Even though we increased the number of text pages, there are not enough in this issue to accommodate the article. Ed.

—★—

Does Couponing Pay?

Editor:

We are interested in securing any information as to the merits of couponing by soap companies. Two or three years ago an editorial appeared in *Soap and Sanitary Chemicals* which advocated that if soap companies would spend as much money in advertising, for example in newspapers, as they spent on couponing, they would receive a much greater value for their money in the form of increased sales.

We are interested in securing a copy of that editorial and the recent one on the subject which was based on A. C. Nielsen Co. data. We would appreciate receiving copies of any such articles or information as to where we may secure such data if unavailable from your office.

Jean P. Fletcher, Research Consultant, Bureau of Advertising, American Newspaper Publishers Assn., Chicago

In addition to the earlier editorial mentioned by Miss Fletcher, we published an editorial in the March issue dealing with sampling and couponing, which was based on a talk by Philip C. Stomberg of A. C. Nielsen Co. The talk was published as a two part article appearing in the March and April issues. The portion of Mr. Nielsen's talk dealing with couponing was published in the April issue under the title, "Does Soap Couponing Pay?" This article should answer many of the questions Miss Fletcher poses regarding the efficacy of sampling and couponing. Ed.

—★—

Botched Up Affair

Editor:

Sorry, but your write-up in the April issue of what we showed at the trade show during the recent National Sanitary Supply Association convention in Chicago is a botched up affair. It should have read:

"Ponsell Floor Machine Co., New York, showed a new 16-inch heavy duty floor scrubbing machine with a 4¼ gallon tank and a noiseless vacuum cleaner with an 18-inch squeegee and having a 72-inch static water lift."

R. A. Ponselle, president
Ponsell Floor Machine Co.,
New York

—★—

Wants Schwartz Reference

Editor:

In the March issue of *Soap and Sanitary Chemicals* we read on page 195 about "Skin Cleaners' Role", where Dr. Schwartz says:

"Properly prepared protective ointments, correctly used, undoubtedly afford a degree of protection, but it must be admitted that the fact that workers always wash off protective ointments before going home, thereby cleansing the skin, contributes no small portion towards the protection which may be attributed to the ointment. The ointments are therefore worthwhile, if only for the reason that they induce washing after work."

Please let us know the exact citation of the paper by Dr. Schwartz, the book in which it is published and where reprints can be obtained.

Dr. Helmuth Stupel,
Seifenfabrik Hochdorf S.A.,
Hochdorf, Switzerland

Dr. Louis Schwartz in the news article referred to was speaking at the

(*Turn to Page* 223)

Twenty years ago . . .

At a meeting of the Chemical Specialties Manufacturers Assn. back in 1933 (then known as the National Assn. of Insecticide & Disinfectant Manufacturers, or the NAIDM) this picture was taken probably at the Edgewater Beach Hotel in Chicago. Some of those included in the picture are Huckins, McCormick, Bell, Hadfield, Weld, Peet, Opitz, and Weed. How many of them can you pick out? The photo was unearthed recently among some old records by Dr. Alfred Weed of John Powell & Co. who is shown on the extreme upper right. Opitz and Peet have since passed away.

Soap, Detergent Product Liability

By John D. Conner and George A. Burroughs
Sellers & Conner
Washington, D. C.

THAT there have been instances when personal injury has resulted from the use of cosmetics and soap is neither a startling nor derisive proposition. These personal products are used daily by millions of consumers of varying ages and sensitivities and have an exposure factor which is potentially greater than in the case of any other class of consumer products with the exception of food. As one expert, in explaining the problem, has paraphrased Lincoln—"when it comes to cosmetic damage you can protect some of the people all of the time; you can protect all of the people some of the time; but you can't protect all of the people all of the time".

When injury does occur, a complaint or claim is usually made against the manufacturer of the product or against the retail dealer or distributor from whom the product was directly purchased. The complaint or claim may result in a substantial lawsuit.

In this article, cases are reviewed in which lawsuits have resulted and where final disposition was made in an appellate court with a reported judicial opinion. Following the review, a summary is made of the more important issues in product liability law with respect to cosmetics and soap and the trends which seem to be developing.

The first appellate decision dealing directly with the liability of a manufacturer of a cosmetic or soap product for injury to a consumer was reported in 1903.[1] In this case, a barber had used a shaving soap which caused burns to his customers and eventually a loss of his business. The barber sued the manufacturer for placing on the market a product with an excessive alkalinity content. But the court dismissed the action, holding that the manufacturer did not know of this defect in formula and was not responsible for the resulting commercial loss.

Before the litigatory attitudes of our public were diverted by World War I, three other cases involving soaps were decided by the appellate courts. In two of these, a needle embedded in bar soap caused injury to the user and brought on litigation based on alleged negligence of either the manufacturer or the retail dealer. In neither case was the consumer successful. In the first of these (in which the manufacturer and retailer were joined as defendants), the court held that a needle in a bar of soap was an "unforseeable" condition for which neither the manufacturer nor dealer should be responsible.[2] In the second of these (in which the retailer alone was sued), the court held that the retailer was not responsible for the presence of the adulterant on the ground that he had no way of knowing that it was there and was, therefore, in no position to take any preventive measures.[3] A third case involved a laundry soap which when used by a housewife caused serious poisoning to the parts of her body which came into contact with it.[4] Here the housewife contended that the soap was not properly saponified by the manufacturer so that when marketed the final product contained poisonous substances. The court sustained this and held the manufacturer liable for the damages. This represents one of the first reported cases in which the manufacturer of a class of products which are not inherently dangerous was held liable to a consumer for damage following a retail sale.

A series of injuries resulting from the use of hair dyes gave rise to litigation in the twenties in New York. One of the decisions resulting from this litigaton—*Karr* v. *Inecto*[5]—is a landmark in this field of product liability law. The *Karr* case represents one of the first definitive judicial pronouncements on the elements which must be proved to impose liability on the manufacturer. In this case, a beauty parlor operator sued Inecto, a hair dye manufacturer, for injuries sustained as a result of handling one of its dye products. At the trial, she produced evidence that some of the dye had stained her hand while she was applying it to a customer and that twelve hours later a serious condition developed in one of her fingers. Her doctor testified that in his opinion the condition was due to contact with a chemical irritant or poison. The person to whose hair the dye was intentionally applied was unharmed. No evidence was introduced to show the chemical nature of the dye. Under these circumstances, the court denied recovery, holding that there was no proof that the dye was poisonous and that, therefore, an inference of negligence on the part of the manufacturer could not be made. It was not enough to show, according to the court, that injury followed contact with the product in time sequence. Definite evidence had to

be produced showing that injury followed contact with a poisonous product manufactured by the person against whom liability was asserted. Proof of the poisonous character would then justify an inference of negligence by the manufacturer.

Decisions Against Mfgrs.

SIX appellate decisions involving liability for injury caused by cosmetics and soap were handed down in the period 1930-1940. There may be noted in these decisions a perceptible change in the attitude of the courts favoring the consumer.

Hair dyes were involved in two decisions. In one of these, a beauty parlor operator was sued by a patron to recover for injury resulting from dermatitis allegedly caused by a hair dye used.[6] The theory was that the patron had informed the operator of prior trouble from hair dye and that this should have prompted the operator to make a patch test. There was ample evidence at the trial showing that the particular hair dye had been used extensively and without any harm to those to whose hair it was applied. Medical testimony established that the patron was sensitized to the dye and the operator relied upon this allergy in defense. The court affirmed a jury verdict for the patron on the ground that the operator applied the hair dye under circumstances where she knew or should have known of the patron's idiosyncrasy and the likelihood of harm. Presumably this was sustained by the evidence showing that the customer had placed the operator in a position where she should have been aware of the need for a patch test to detect the allergy.

In another case a housewife sued the manufacturer of a hair dye to recover damages for personal injuries sustained as the result of dye getting into her eye.[7] The court in ruling in favor of the housewife stated that since the evidence established that the dye was poisonous and that injury followed contact, the jury could, without further evidence as to how the particular bottle happened to contain a poisonous ingredient, infer that such a condition arose as a result of the manufacturer's negligence. *Karr* v. *Inecto,* previously discussed, was relied upon in support of the principle that it is not necessary in these types of cases based upon an alleged negligence to prove any specific conduct which deviates from ordinary prudence.

The explosion of a bottle of fingernail polish gave rise to one product liability suit. The injured purchaser charged the retail dealer with negligence for selling a product having flammable tendencies without giving warning of its dangerous character. The court held for the retailer on the ground that the retailer had no knowledge of the formula of the product or the presence of any flammable ingredient. This is one of the very few cases in this field where a hazard other than toxicity has been involved.[8]

The use of a depilatory cream containing thallium acetate caused peripheral neuritis and led to a product liability suit by the injured housewife against the retail dealer.[9] At the trial, the evidence showed that the injury was due to or enhanced by the plaintiff's susceptibility to thallium because of her abnormal endocrine glands. The court ruled in favor of the housewife on the ground that the product was purchased under an express warranty of safety which was not true. This warranty consisted of a statement made by the salesgirl who sold the product to the effect that the product was harmless to use. Of importance is the fact that the allergy of the plaintiff did not defeat recovery, the court holding that the product would have affected the system of a normal person, although not to the extent that it affected the plaintiff.

An allergy factor was involved in another case involving skin injury resulting from the use of a face powder.[10] It was conceded that the face powder contained aniline dyes which are known irritants to some persons, although non-irritating to the average person. The plaintiff was one of the "some" persons allergic. The court held for the plaintiff against the retailer who sold the face powder on the ground of a breach of the implied warranty of fitness. (An implied warranty is one raised by the law for reasons of public policy.) The treatment given by the court to the defendant's contention that plaintiff's allergy should have precluded recovery is of interest—"We do not think that a seller of face powder containing a known irritant to 'some' persons' skin can be held to say that he is not liable for a breach of an implied warranty of fitness where injury results from a use of the powder."

A sun tan oil was alleged to be responsible for a serious kidney condition in one case and the manufacturer and retailer were jointly sued by the injured consumer.[11] The product involved was one widely used and there was no evidence that its use had ever before caused any injury. The court dismissed the action—as to the retailer on the ground that a seller of an article in an "original package" is not liable for harmful effects

During the past 25 years the courts in cases involving injury by soaps and cosmetics have become much more sympathetic to claims by consumers.

from the use of such article, and, as to the manufacturer, on the ground that the plaintiff had only proved that an aniline dye caused her injuries without proving that the specific aniline dye in the manufacturer's product was responsible.

Allergy Factor Important

DURING the period 1940-1950, there were more reported decisions involving cosmetics and soap than there were during the preceding forty years. The decisions reflect the growing problem of the allergic consumer.

Products used on the hair were involved in four cases.

The patron of a beauty shop sued the manufacturer of a hair dye for injury sustained as a result of an application. Recovery was sought on the ground of negligence in marketing a product with harmful ingredients. The trial court dismissed the action presumably on the ground that the operator had disregarded the instructions which the manufacturer had issued showing how the dye could be used safely. This was reversed on appeal on the basis that, if the product were a dangerous product, the effect of the manufacturer's directions for safe use to the operator should have been a question to be resolved for the jury, not the court.[12]

In two cases involving injuries allegedly caused by the same brand of hair dye different results were reached.

In one case, a housewife brought suit for loss of hair alleged to have resulted from the use of a coconut oil shampoo.[13] At the trial, the evidence was to the effect that immediately after the plaintiff applied the shampoo she experienced a burning sensation in the scalp, suffered irritation and sores, followed by the continuous loss of her hair until she became bald. There was evidence that the particular shampoo used may have come from a quantity of the defendant-manufacturer's shampoo ordered withdrawn from the market by the Food and Drug Administration because of excessive alkali content. There was no direct evidence that the particular shampoo in question actually came from the condemned batch or any evidence showing that it contained excessive alkali or was otherwise injurious. The jury returned a verdict of $20,000 and the manufacturer appealed on two primary grounds: (1) there was no evidence of a poisonous ingredient in the actual bottle of shampoo used, and (2) the manufacturer had no knowledge of the characteristics of its product which could cause baldness. These contentions did not prevail on appeal, and the court refused to follow the rule in *Karr* v. *Inecto* that in cases of this nature proof must be adduced showing that the specific product allegedly causing injury contained a poisonous ingredient.

The same brand of product, same type of injury and set of circumstances were involved in another case decided by the United States Court of Appeals for the Eighth Circuit in 1950.[14] In this case a jury verdict of $27,000 against the manufacturer was reversed and judgment entered for defendant. Two factors of proof distinguished this case from the prior one and brought about the difference in outcome. In the first place, the bottle of shampoo in question was preserved and a chemical analysis made enabling chemists to testify that the alkalinity content of the bottle was perfectly safe. Secondly, a number of specialists in dermatology were produced who stated that plaintiff's condition was not and could not have been caused by defendant's shampoo or by any chemical externally applied to the human scalp. This was in sharp contrast with the proof before the jury in the earlier case.

Personal injury allegedly resulting from processing the hair with a cold wave preparation gave rise to a damage suit against the manufacturer.[15] The facts indicated that some of the cold wave solution came into contact with plaintiff's forehead and other parts of the body and was followed by a severe case of dermatitis. There was no evidence that the product in question had ever caused skin irritation prior to its use in this case. The product was analyzed and found to contain a safe quantity of thioglycollic acid (which was alleged as the harmful ingredient). Medical testimony by plaintiff's own physician indicated that plaintiff was allergic. Liability was sought to be imposed on the basis that the manufacturer negligently failed to warn (a) that many persons were susceptible to thioglycollic and (b) that great care should be used in the application of the product. But the court held that there was no showing that the solution used was a skin irritant "any more than many cosmetics, face powders, cold cream and nail polish universally used by women" or that "many persons" were susceptible to its use. No merit was found in the contention that a warning should have been given that "great care should be taken", the court indicating that the directions sent with the solution stated that it was to be used on the hair and not on the skin and that there was evidence that had the neutralizer been properly applied no injury would have resulted.

Not all cases during this period were concerned with material used on the hair—there were claims for injury allegedly arising from the use of mascara, cold cream, depilatory, fingernail polish remover, soap powder, perfume and lipstick.

One of the more famous cases in legal circles was *Carter* v. *Yardley & Co.*[16] in which the Supreme Court of Massachusetts took occasion in a personal injury action involving perfume to abandon the rule which it had historically followed that the manufacturer of a product which is not inherently dangerous (such as an explosive or drug) cannot be held liable for negligence at the hands of a consumer

Recovery was allowed in a case involving soap to which a representative number of people were found to be allergic. Such cases require a warning of allergy risk.

with whom the manufacturer has not dealt directly. The court changed its rule and embraced the principle followed in the large majority of states today that a manufacturer may be liable to a remote consumer in negligence cases involving not only "inherently dangerous" products but also products "dangerous only if negligently made, prepared or used." The facts were these: The plaintiff purchased a bottle of Yardley's perfume at a retail store and after use suffered a second degree burn. Others used the same perfume after this incident for testing purposes and received similar skin injury. No analysis was made to show any poisonous ingredients which may have been responsible. The manufacturer (in addition to the technical question of privity) raised by inference that the injury resulted from an allergy and this had not been disproved. The court held, however, that the plaintiff "was not required to prove that a majority of consumers would be injuriously affected" if a "sufficient number" were shown to be susceptible. Apparently this proof was satisfied by the evidence of injury to persons other than plaintiff in the use of the same perfume.

Allergy was a factor in issue in quite a few cases.

The use of a soap for dishwashing purposes resulted in dermatitis and a suit by an employee against her employer. It was conceded that the cause of the injury was the employee's allergic condition. Recovery was allowed on the ground that there was sufficient evidence that a representative number of persons were allergic to the soap in question and the employer should have given a warning of the potential allergy risk.[17]

A damage suit for personal injuries sustained as a result of using a cold cream was brought against the drug store which sold it.[18] At the time of sale the drug store clerk had taken the pains to advise plaintiff that the cold cream would be suitable to her needs. The court held that this constituted a warranty and imposed liability. The store's contention was that plaintiff had failed to show that the cream was harmful to a normal person and that whatever harm resulted was due to the peculiar susceptibility of plaintiff's skin. The court, although conceding that liability for breach of warranty would not have followed in the absence of proof that the cream was unfit for use by a normal person, held that an inference that plaintiff's skin was normal could be drawn from plaintiff's testimony that there was nothing wrong with her skin and that she had previously used cold cream without ill effects.

A drug store was successfully sued in another action involving injury from the use of a lipstick which the store had retailed.[19] Again it was shown that the consumer was allergic and the store argued for the principle that the implied warranty of fitness is not breached when only a small proportion of those who use a certain article are injuriously affected. The court relied on a prior case in which a hat manufacturer was held liable to a person who was sensitive to a dye in the hat and cited the following portions of the opinion in that case:

> "The mere fact that only a small proportion of those who use a certain article could suffer injuries by reason of such use does not absolve the vendor from liability under the implied warranty created by the statute (uniform sales act.); otherwise, in every action to recover damages for the breach of an implied warranty, it would be necessary to show that the article sold . . . would be injurious to every user."[20]

The purchaser of a mascara cream brought suit against a department store which sold the product for injuries sustained as a result of using it.[21] Her suit was based on breach of warranty—the warranty contended for being statements contained on a card placed at the cosmetic counter that the product was "harmless" as well as oral statements made by the salesgirl at the time of purchase indicating its suitability. The court held for the defendant on the ground that there was no showing that the mascara was purchased in reliance on either the statements made by the salesgirl or appearing on the card.

Not all claims are based on the toxicity of ingredients in cosmetics—occasionally there are cases when other properties such as flammability are in issue. Such was the situation in a 1944 case where a five year old boy died from injuries resulting when he splashed the contents of a bottle of nail polish remover on his clothing and then touched a lighted match to it. It was conceded that the bottle and contents were harmless to the human skin when used as a finger nail polish remover but that it contained portions of a highly inflammable element which rendered the bottle and contents dangerous when exposed directly to fire. The

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LIQUID DETERGENTS

PRIOR to the introduction of synthetic detergents, soap was the primary ingredient in all liquid foaming cleaning compounds. This was true not only of dishwashing compounds but also of other cleaning products for household and industrial washing operations. Soap, however, has a definite drawback in the cleaning of dishes and glassware, especially in hard-water. It forms a scum, also known as curds, which adheres tenaciously to surfaces. In time, this scummy residue tends to build up on the contacted surfaces and becomes difficult to rinse off, leaving a dull, sticky film. Extra amounts of soap are required to do the actual cleaning, and in addition, these curds become a media for fostering bacteria which carry disease.

Synthetic detergents, do not react with hard water to form a scum or curd and leave practically no film on the surface after rinsing. They clean equally well in hard water and in soft water. Furthermore, they rinse freely and quickly, leaving the surface clean.

Synthetic detergents entered the household field around 1931 with the introduction of "Dreft." However, liquid synthetic detergents, with the exception of several relatively small-selling shampoo products, appeared in this field only at the end of World War II. Lehigh Chemical Co. introduced "Anderol" as a side line in 1944, and in late 1946 "Glim" was brought on the market by General Aniline and Film Corp. "Glim" was the first liquid synthetic detergent to be distributed on a nation-wide

basis, although several small companies were selling liquid synthetics in restricted market areas. In 1948, one of the large soap companies came into this market with a high-foaming product and other companies soon followed with foaming liquid products.

Since then the synthetic liquid detergents have been one of the fastest growing segments of the soap and detergent business. Factory sales of liquid synthetic detergents calculated by the Soap Association were approximately 712,000 pounds in 1948. By 1949, sales statistics show a 10.32 million pound liquid sales or 1.2% of the total sales of synthetic detergents. The production figures reported for liquid detergents in the following years are as follows: in 1950 their sales reached 23.56 million pounds or 1.9% of total synthetic detergent sales; in 1951 the figure had risen to 38.2 million pounds or 2.6% of total synthetic sales with a dollar sales value of $18,653,000; and sales in 1952 had increased to 49.6 million pounds or 3% of the total synthetics with a dollar value of $22,365,000. For the first nine months of 1953 the Soap Association reported sales of 58.7 million pounds with a dollar value of $21,837,000. This nine months' figure represented 4.2% of the total synthetic sales tonnage. Preliminary reports have indicated that the liquid sales have been slightly higher for the fourth quarter of 1953 and it is expected that total sales of liquid detergents for 1953 will be approximately 80 to 85 million pounds.

By Daniel H. Terry*

Bon Ami Co.

*Before 27th annual meeting, Assn. American Soap & Glycerine Producers, Inc., New York, Jan. 27, 1954.

Actually, total sales for 1953, reported after this paper was given, were 94.6 million pounds with a dollar value of $30,661,000. At this rate of increase, sales for this year should pass the 100 million pound mark with ease. Although the proportion of liquid products to total synthetics is still relatively small, it represents a very sizeable business both poundwise and dollarwise.

The major portion of the liquid synthetic detergents have gone into household packaged products (estimated average about 85%) rather than into the industry in bulk form. Market surveys predict that within the next three to five years liquid household detergent sales may represent approximately 10% of the total household detergent market.

This increase in consumption of liquid synthetic detergents is due largely to their growing popularity with housewives for dishwashing and for hand laundering of woolens and lingerie. Liquid detergents appeal to the housewife by offering:

1. Dust-free qualities
2. Top-notch grease dissolving properties
3. Ready solubility in water
4. Rich sudsiness
5. Ready rinsability
6. Ease of use
7. Pleasant and clean odor
8. Sparkling results
9. Absence of alkali and presence of a neutral or slightly acid pH. This enables the liquids to be closer to the iso-electric point of the skin and therefore easier on the hands.

Most of the changes made in liquid household detergents since their introduction resulted directly from the housewife's wishes and requirements.

The first major liquid product in the market had excellent detergency, but not sufficient foam for most housewives who had become used to foam for cleaning. It had to be reformulated to give the consumer-demanded suds and subsequent products were designed to give high, stable foam. At the same time considerable emphasis was placed on formulating products that would impart a slippery, soapy feel when used.

The development of the fatty acid, mono and dialkanol amides, primarily the lauric acid derivative, as synergists or foam stabilizers has had a considerable part in the growth of liquid detergents. Without these foam stabilizers it might have been difficult to formulate a product exhibiting the high, stable, foaming properties desired by the housewife.

The compounds which have shown most promise in liquid detergent formulations are: salt-free 40% and 50% active alkyl aryl sulfonates as the sodium and ammonium salts; lauryl alcohol sulfate as the ammonium and triethanol amine salts; ammonium sulfate derivative of nonylphenol polyglycol ether; and the synergists or foam stabilizers (fatty acid mono and dialkanol amides, preferably the lauric acid derivative).

Perfuming of liquid detergents has gained in importance. Originally perfumes were added simply to mask the rather harsh chemical odor of the ingredients. Since then however, market statistics have shown that perfume and odor definitely affect product sales. Today close cooperation with perfumers, extensive consumer panel tests and limited market tests are utilized by many manufacturers to find a perfume for their product that will be acceptable to the housewife.

Packaging of liquid detergents has also come in for its share of changes. Slipperiness of the bottle when some liquid had spilled down the sides presented a major problem. An easily gripped bottle was designed which prevents slippage in the user's wet hands.

In the beginning the packaged liquids were offered in a highly concentrated form in 4-ounce bottles. Within a relatively short time the concentration was reduced and the liquid sold in

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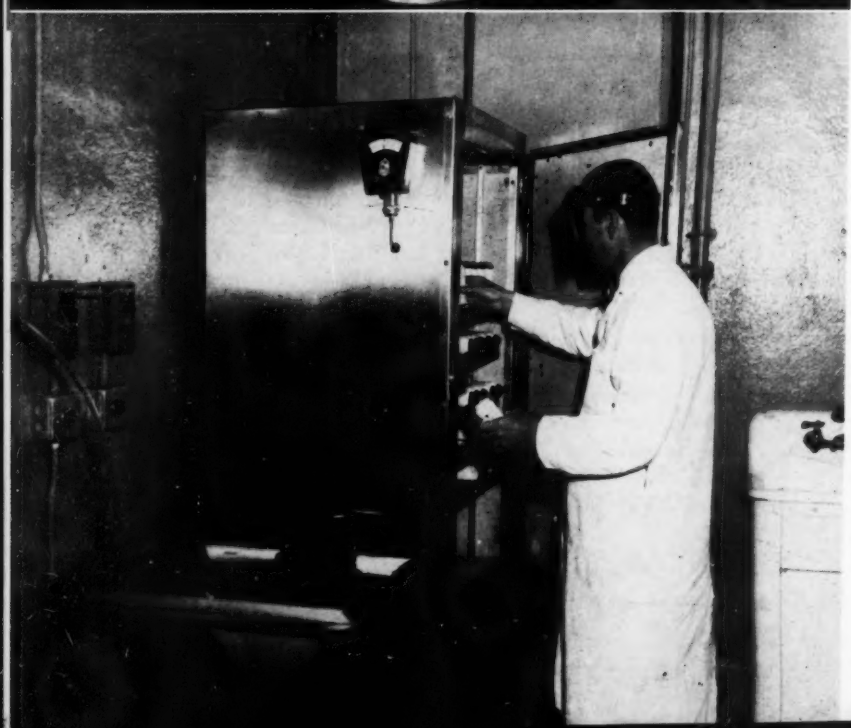


New D&O

TO keep up with and pioneer in new developments in the fast breaking and large and growing aerosol products industry, Dodge & Olcott, Inc., New York, recently announced the completion of a new laboratory specializing in aerosol research work. Earlier, the 155 year old essential oil and aro-

An aerosol can containing a shave cream is filled by Pressure Filling System. All foam products must utilize this manner of filling.

matic chemical firm, which a year ago had been acquired by Fritzsche Brothers, Inc., New York, had completed remodeling and expanding its perfuming materials laboratory, manufacturing and shipping facilities at 180 Varick St., New York.

To meet the challenge of the right perfume for the vast and ever increasing number of products now being marketed in aerosol form D&O, which is headed by aggressive John J. Casullo a Fritzsche veteran, constructed the new aero-

In the Cold Filling System, gas is drawn from the spigots of the deep freeze into a flask.

sol laboratory which is completely equipped for the filling and testing of aerosol packages. Since each aerosol item requiring a perfume ingredient brings with it the problems of solubility, leakage, corrosion, compatibility, shelf life, etc., these questions must be resolved by an aerosol chemist.

The new D&O aerosol laboratory is equipped with an aerosol pressure filling system and a cold filling system. As is well-known by aerosol people, the pressure filling system is best suited for foam products such as shave creams, sham-

All cans that have passed the water bath test are then placed in the Corrosion Box for checking compatibility of contents with can, during actual shelf life of the product.

Aerosol Laboratory

poos, hand lotions, etc. The Dodge & Olcott organization is well equipped by training and long years of practical experience to handle the perfuming of products in the toiletries, cosmetic and related fields. The new D&O laboratory's cold system of filling is used to experiment with products such as insecticides, room deodorants, colognes, hair lacquers and anti-perspirants, which experience has shown are filled better with the cold system.

Photographs on this and the facing page show some of the new equipment installed in the new D&O aerosol laboratory. A special water bath has been installed for testing finished cans for leakage after sealing. This bath maintains a constant temperature of 130°F., roughly the equivalent of a year's shelf life. Aerosol cans that pass the water test are then placed in a corrosion box, which is a specially built cabinet capable of maintaining a desired uniform temperature over a predetermined period of time. In this way the compatibility of the finished aerosol product with the can components . . . the walls, nozzle, etc., can be thoroughly tested. Here, too, if there is any corrosion or clogging its extent can be determined.

Aerosol cans are cut apart upon removal from the corrosion box and examined minutely for any evidence of incompatibility. Finished aerosol products that have successfully passed all required tests are then forwarded to the manufacturer in either a six or 12 ounce can which has whatever type of valve the customer requests.

The cans feature specially designed labels that describe the contents of the aerosol can and tests passed. Labels come in three different color combinations signifying one of three basic types of aerosol products. Pink and black is

(*Turn to Page* 223)

Filled cans are crimped or sealed with special capping machine. Type of valve used is determined by product to be packaged.

The water bath, which is maintained at a temperature of 130, shows up any possible leakage after capping.

Aerosol can is filled from flask. For insecticides, colognes, room deodorants, anti-perspirants, hair lacquers, etc. the cold system of filling gives the best results.

Theory of Detergency

Our knowledge of detergency is very incomplete considering the wide-spread and long use of detergents. Fundamental research on micelles is now producing results.

By Lawrence M. Kushner* Surface Chemistry Section, National Bureau of Standards

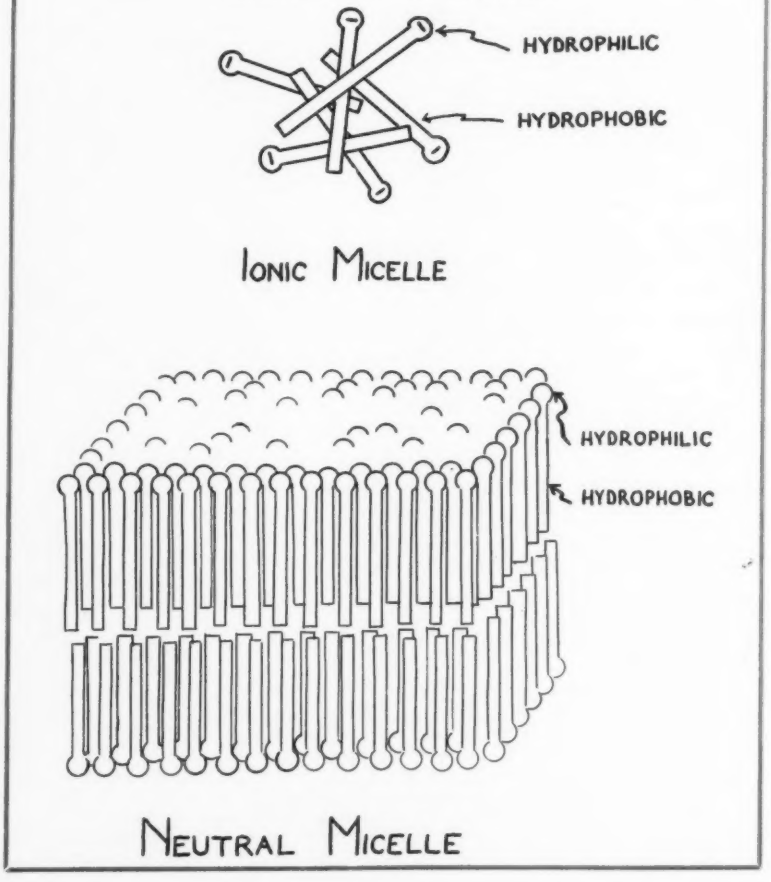
IT is not uncommon to find that a phenomenon which we encounter and make use of daily is less completely understood than others which are seemingly more complex and intrinsically more difficult to study. Detergency is a case in point. Detergents of one type or another have been in use sufficiently long that it is impossible to establish when they were first used. Yet even today, in what must be regarded as an age of considerable scientific accomplishment, our understanding of detergency is remarkably incomplete.

The approach taken by fundamental science to this problem has been that in order to gain insight into the overall phenomenon of detergency, it is necessary first to understand detergent solutions independent of their relationship with soils and soiled substrates. Such studies have borne fruit. As an example, the most obvious property of detergent solutions, their ability to produce foam, has been explained in terms of the adsorption of the surface active molecules or ions at the surface of the solution, and the resulting low surface tension. Another example is the establishment of the requirement that a molecule, in order to have detergent properties, must consist of a hydrophobic group and a hydrophilic group in proper juxtaposition. Both of these concepts must now be considered as basic principles.

Unfortunately however, there are many other aspects of detergent solutions which are not so completely understood. One of these, the question of micelle structure, has been the subject of many researches[1] in the past fifty years and is still a very active and interesting field.

The initial experiments leading to the concept of association in soap solutions were reported by Krafft[2] in Germany in 1896 and McBain[3], in this country, in the

Figure 1—Representation of the ionic and neutral or lamellar types of micelles as considered by McBain.



(*Text of talk presented at meeting of Chemical Specialties Manufacturers Association, December 7, 1953, at the Hotel Mayflower, Washington, D. C.)

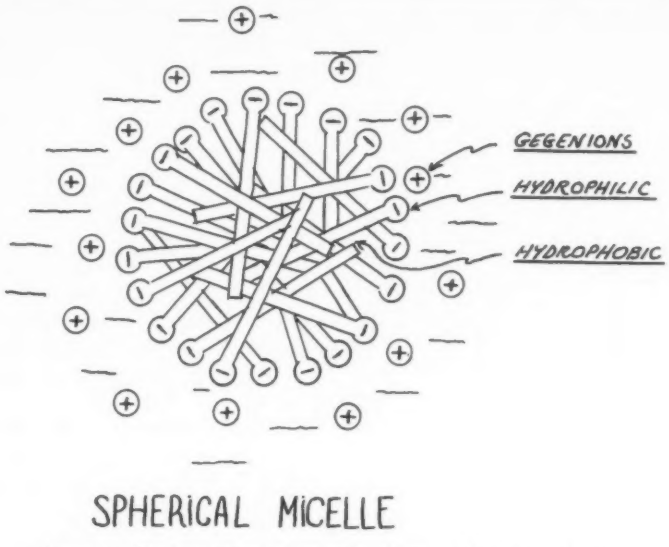
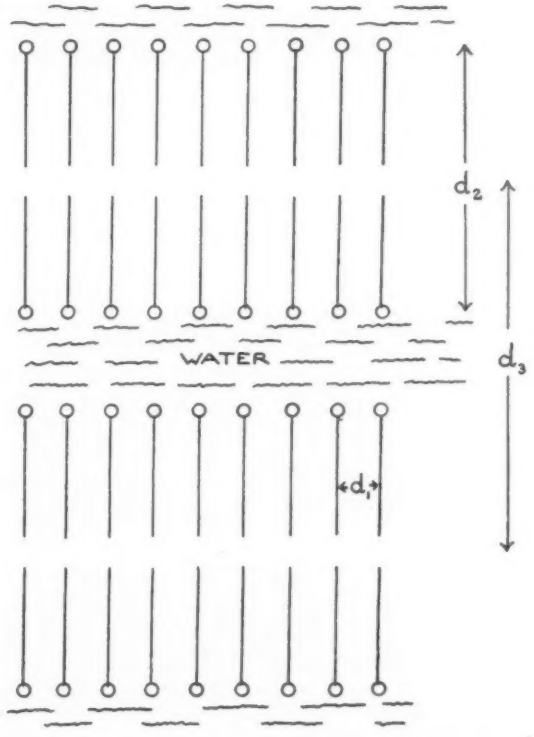


Figure 2—Hartley spherical micelle showing the gegen-ions.

early part of this century. Their dew-point and freezing point studies showed that above some well defined concentration for each system, (referred to nowadays as the critical micelle concentration) association of the soap molecules occurred.

Figure 3.—Lamellar micelle as deducted from X-ray diffraction studies.



The next important work was that of McBain and Salmon[3]. They measured the electrical conductivity of soap solutions and their results led to the following conclusions: 1. The conductivity of soap solutions could not be ascribed to the alkali formed by hydrolysis of the soap. 2. In concentrations below the critical micelle concentration, the soap or detergent was ionized as any simple 1:1 electrolyte would be expected to be. 3. Above the critical micelle concentration, there was aggregation of the surface active ions leading to the formation of a highly charged cluster of ions which behaved kinetically as a unit. This latter was the only plausible explanation of the sudden decrease in the equivalent conductance of the solution and equally sudden increase in the transference number of the surface active ion at the critical micelle concentration.

Subsequently McBain was led to postulate that these ionic micelles were in equilibrium with a 'neutral' colloid, composed of undissociated molecules. Further, it was proposed that equilibrium shifted, at higher concentrations, to favor the formation of the neutral colloid at the expense of the ionic type. The ionic micelle was considered to be a small, poorly organized structure. The neutral colloid however was a large, lamellar structure having the molecules arranged in much the same manner as they were in the solid soaps. Representations of the ionic and lamellar micelle are shown in Figure 1.

Hartley's Theory

IT was at this point that G. S. Hartley[4], an English investigator, stepped into the picture. Hartley maintained that the properties of dilute, i.e. clear, isotropic, free-flowing soap solutions could be accounted for by utilizing merely the concept of the spherical ionic micelle (Figure 2). He pointed out that surrounding the highly charged ionic micelle of McBain, there must be a distribution of oppositely charged ions. These were termed "gegen-

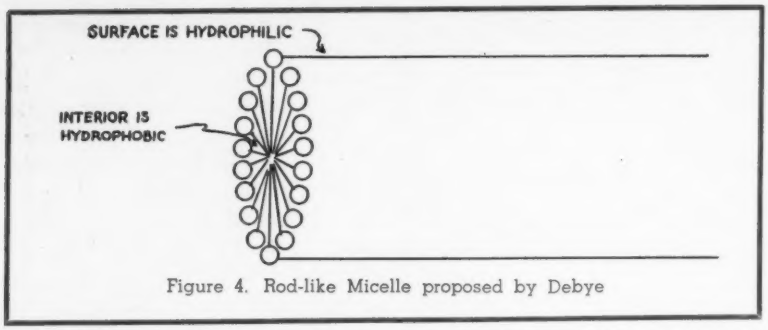


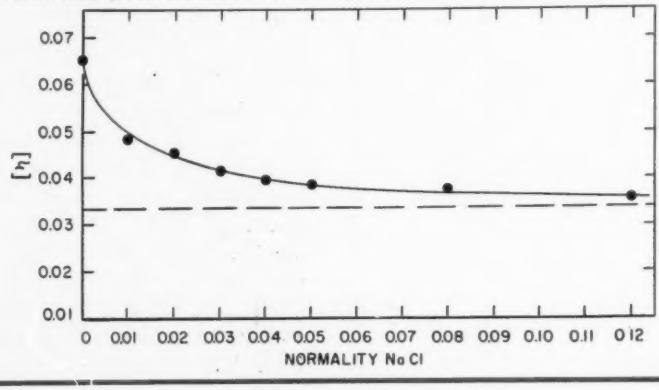
Figure 4. Rod-like Micelle proposed by Debye

ions". Moreover, the distribution of these gegen-ions about a micelle must be a function of concentration, and if the number of gegen-ions/micelle is changing, the conductivity of the solutions must change as was observed by McBain. It is unfortunate that subsequent workers were to misquote and misinterpret Hartley's position. It is true that Hartley was the chief protagonist of the spherical micelle, but it is also true that he always considered only the region of dilute solutions. Many of the later investigations which purported to prove the existence of lamellar micelles and disprove the Hartley concept were concerned with studies made on solutions of concentrations well above those considered by Hartley.

Among those were the very important and interesting investigations of Harkins, Philippoff, Hess, Gunderman and others[5]. Their researches were concerned with the X-ray diffraction patterns which could be obtained by passing a narrow beam of X-rays through a thin layer of a rather concentrated detergent solution. Their results have been widely interpreted in terms of a lamellar micelle (see Figure 3). In all of their diffraction patterns they observed one characteristic band, corresponding very closely to the mean distance (d_1) of separation between hydrocarbon chains in the solid, which was assumed to be the distance between hydrocarbon chains in the micelle. They observed another band, corresponding to twice the length of the molecule, which was associated with the thickness (d_2) of one layer of the micelle. This spacing was shown to increase when an oil had been solubilized in the micelle, thus indicating the locus of solubilization as being between the 'slices of bread in each of the sandwiches' making up the total structure. Another band, which was a function of concentration, appeared to be associated with either the mean distance (d_3) between the centers of a rather loose aggregate of sandwiches, or the mean separation between the centers of individual single sandwich micelles.

At the time of his death, Harkins appeared to favor the picture of a disc-like micelle consisting of only one double layer having the polar heads of the molecules on the surface of the structure and the hydrocarbon portions in the interior. He recognized, of course, that if the discs became small enough they could also be considered as spheres. Recently, Brady[6] has shown that an interpretation of these X-ray data is possible on the basis of a radial distribution of spherical micelles having diameters of about twice the length of the detergent molecule.

Figure 5—The intrinsic viscosity, $[\eta]$, of micellar sodium dodecyl sulfate solutions as a function of concentration of neutral electrolyte. The horizontal broken line gives the value to be expected if the micelles are spherical.



Recent Detergent Studies

WITHIN the past five years a number of other types of measurements have been made on detergent solutions. Probably the most conclusive of these are the light scattering studies of Debye and Anacker[7] and the streaming birefringence work of Scheraga[8]. Debye made measurements on a number of cationic detergents, typified by dodecylamine hydrochloride, and showed clearly that 1) in confirmation of Harkins dye titration work, the addition of neutral electrolyte to detergent solutions lowered the critical micelle concentration and 2) the molecular weight of the micelle, at least as measured in this manner, increased on the addition of neutral electrolyte to the solutions. In this study, however, the micelles were so small that no conclusions could be drawn concerning micelle shape. In a later paper it was shown that the light scattering data obtained from solutions of hexadecyl trimethyl ammonium bromide to which relatively large amounts of sodium bromide had been added, could be analyzed from the point of view of micelle shape. The conclusion was that the data were best interpreted by assuming that the micelles were rod like. The diameter of the rod was twice the length of the detergent ion and its length depended on the quantity of neutral electrolyte present in the solution. This type of micelle is shown in Figure 4.

Scheraga's streaming birefringence work was also done with

hexadecyl trimethyl ammonium bromide and the same interpretation as used by Debye and Anacker was consistent with his experimental data. Once again there appeared to be no doubt that the micelle increased in length as the concentration of electrolyte was increased.

In this connection it is of interest to consider the viscosity experiments performed at the National Bureau of Standards by Kushner, Duncan and Hoffman[9] with sodium dodecyl sulfate. Their results, shown in Figure 5, indicate that on adding neutral electrolyte (NaCl) to the solutions the intrinsic viscosity approaches the theoretical value for spheres (indicated by the dashed line) and shows no inclination to rise from this value as would be the case for either the Harkins disc or the Debye rod type of micelle. The initial high values of the intrinsic viscosity are to be expected on the basis of either solvation of the micelles or more probably, mutual repulsion between the micelles because of their like charge.

It should be mentioned that the sodium dodecyl sulfate used in this investigation was synthesized in our laboratory and subsequently purified before use. Our results should not be interpreted as being opposed to those of Debye and Anacker since not only did they use a different detergent, but in their experiments sufficient neutral electrolyte was added that at 30° crystallization of the detergent occurred. Their measurements were consequently made at 34°. However this too is uncomfortably close to the temperature at which crystallites might be forming.

This is more or less the status of the problem today. The investigations mentioned do not by any means represent all of the work that has been done on this problem. An effort has been made however to pick those investigations leading to significant advances in our understanding of these systems, and those (of more recent vintage) in which an attempt was made to use pure materials. The bibliography of

(*Turn to Page* 195)

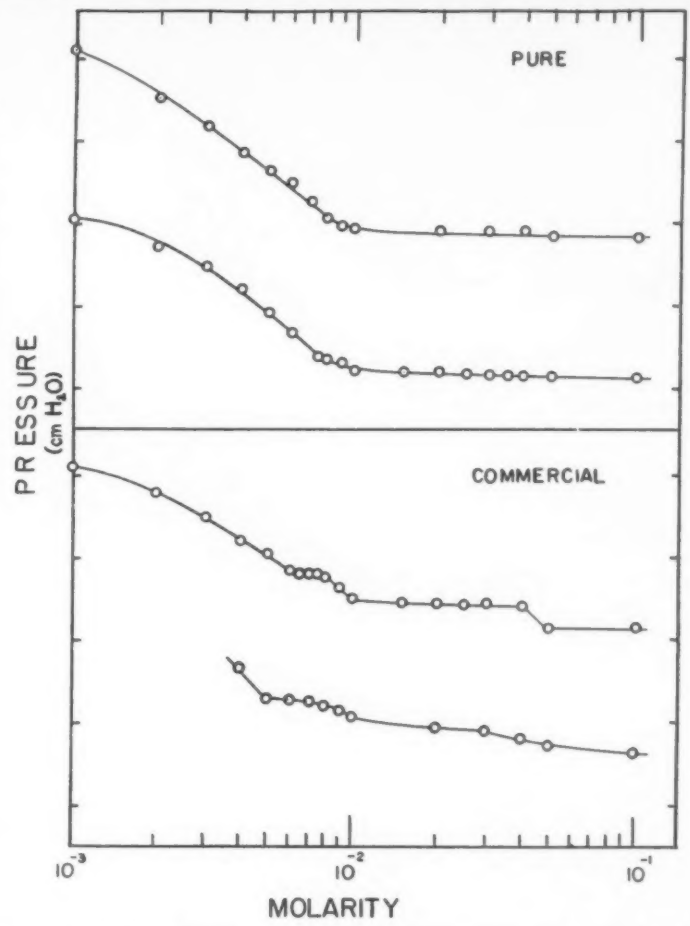


Figure 6—Bubble pressure as a function of concentration for samples of commercial and pure sodium dodecyl sulfate.

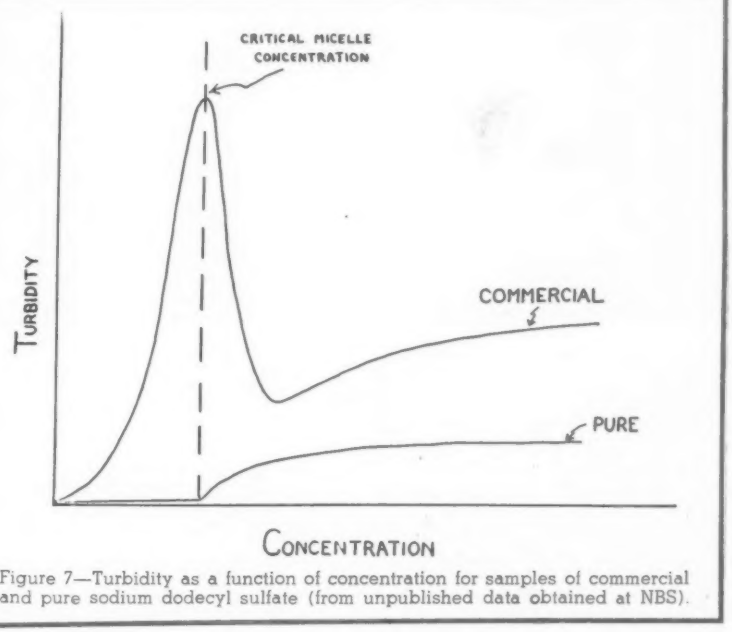


Figure 7—Turbidity as a function of concentration for samples of commercial and pure sodium dodecyl sulfate (from unpublished data obtained at NBS).

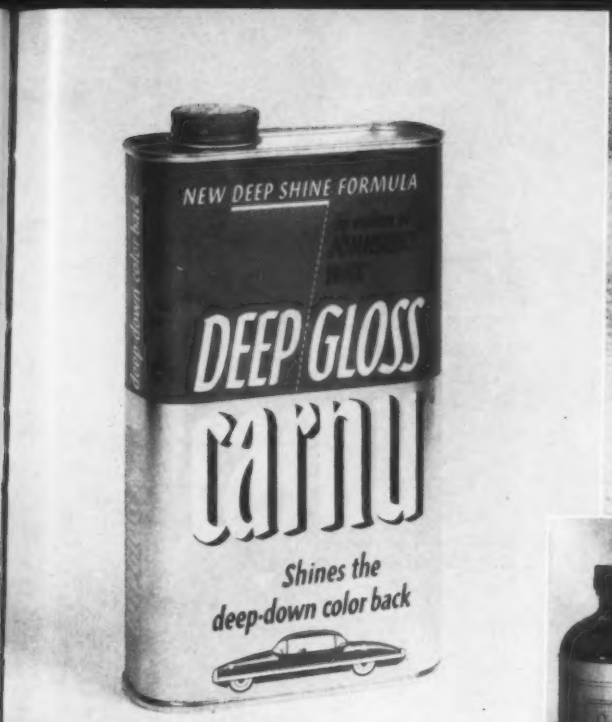
WHAT'S NEW?

"Purex Dry Bleach" in powder form is now packaged in 1 and 6¼ ounce bottles. The large size is recommended by the maker, Purex Corp., Ltd., So. Gate Calif., for laundry use and the smaller for use around the bathroom.

A new aerosol dispenser room deodorant that features a "spring bouquet" scent has been added to its line of "Wizard" deodorizers, it was announced recently by Boyle-Midway, Inc., New York. Six ounce aerosol can retails for 89 cents.

"Bab-O" scouring cleanser, made by B. T. Babbitt, Inc., New York, has joined the swing to "king size" economy packaging. The cleanser is also available in the standard smaller size package unit.

For the first time a soap and synthetic detergent are marketed under one well-known name. Lever Brothers Co., New York, announced recently the new "Rinso Blue" synthetic detergent to match its famous and now improved soap namesake. Both products contain "Solium" fluorescent dyestuff as the bleaching and whitening agent.



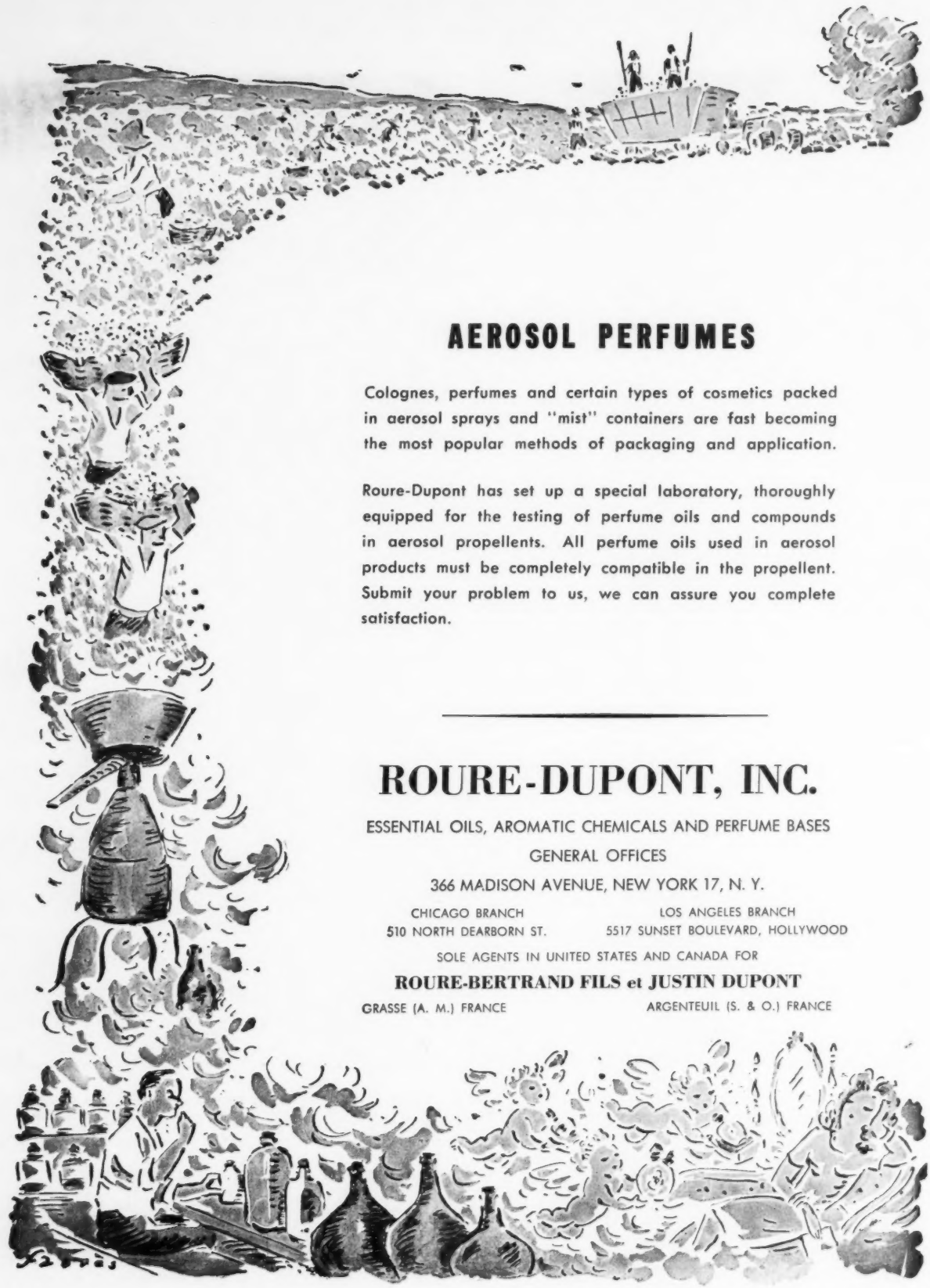
"Deep Gloss Carnu," a new type one-step auto polish that is claimed to have special properties for intensifying colors on all types of auto finishes was announced recently by S. C. Johnson & Son, Inc., Racine, Wis. Polish, which is said to be a blend of five cleaning agents plus a combination of gloss producing chemicals, is applied with a cloth, allowed to dry and then polished.

A Yardley of London Co., New York, "English Lavender Weekender," was announced recently. It contains a toilet size cake of hard-milled soap, English Lavender Cologne and bath salts. In light blue box under transparent sleve, package retails for $1.95 p.t.

New "Lixoil" hand cleaner of Lixoil Laboratories, Boston, removes a variety of materials from the skin including paint, tar, pitch, shoe-polish stains, lipstick, etc. Eight-ounce bottle retails for $1.50

New six can handi-pack container for its "Charge-A-Can" disposable refrigerant containers was introduced recently by the aerosols and refrigerants (Eston Chemicals) division of American Potash & Chemical Corp., Los Angeles.

New barrel pump for two inch or 1½ inch standard drum openings announced recently by James Varley & Sons, Inc., St. Louis. Because of collapsible steel suction pump the unit can be attached to 55, 30 or 15 gallon drums. It is cadmium plated and pumps one pint of liquid with each stroke of the handle. Can pump thin or viscous liquids.



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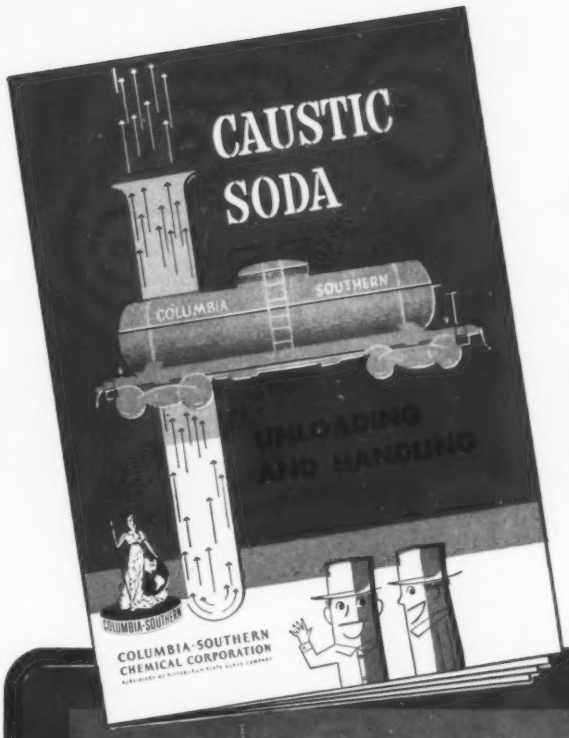

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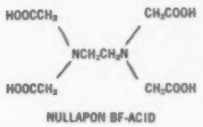

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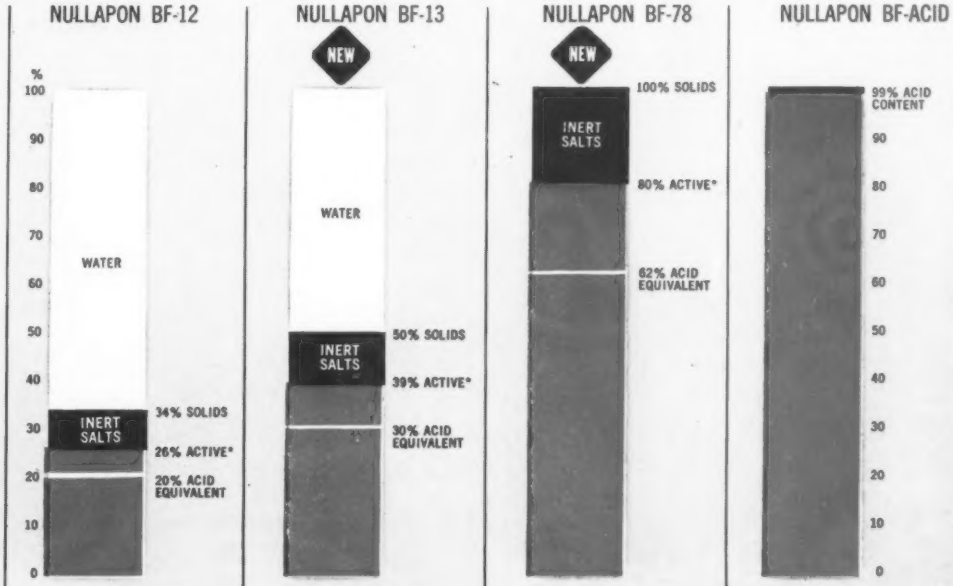

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News

Colgate Names Two VPs

Colgate-Palmolive Co., Jersey City, N. J., has just announced the appointment of Robert E. Hilbrant as vice president of the toilet articles division and of Marshall S. Lachner as vice president of the soap sales division.

Marshall S. Lachner

R. E. Hilbrant

A graduate of the University of Wisconsin, Mr. Hilbrant joined the company in Chicago in 1924 as assistant office manager. He served successively as supervisor and district manager of the Chicago toilet articles division and in 1943 he became manager of the new products division in Jersey City. In 1944 he was named sales manager of the toilet articles division and in 1953 he became its manager.

Mr. Lachner, who is a graduate of the Wharton School of Finance of the University of Pennsylvania, went with Colgate in 1938 as displayman and later served as salesman, district and divisional manager and sales manager. In 1950 he joined the home office soap department as sales manager and in 1953 he became manager of Colgate's soap and industrial sales department.

New Breck President

John H. Breck, Inc., Springfield, Mass., recently announced the following changes in corporation officers: John H. Breck, Sr., formerly president, now chairman of the board; Edward J. Breck, formerly vice president and general manager, now president; John H. Breck, Jr., formerly treasurer, now executive vice president; Constance Breck, formerly corporation clerk, now treasurer and corporation clerk; Arthur W. Tosh, formerly sales director of the drug and department store division, now vice president in charge of sales and corporation director.

John H. Breck, Sr., retiring president of John H. Breck, Inc., Springfield, Mass., who now becomes chairman of the board, shakes hands with Edward J. Breck, new Breck president. Other officers are Arthur W. Tosh, newly elected vice-pres. in charge of sales, extreme left; Constance Breck, treasurer, and John H. Breck, Jr., executive vice-president.

Deupree U. S. Soap Rep.

Richard R. Deupree, chairman of Procter & Gamble Co., Cincinnati, is representing the soap industry as a member of the United States delegation to the second International Conference of Manufacturers to be held in Paris, May 23 to 25.

In the week preceding the opening of the Paris conference, the American delegates will split into groups of 12 or more to hold Western European regional conferences in Scandinavia, the Benelux countries, Great Britain, France, Germany, Switzerland, Austria, and Italy. Mr. Deupree has been appointed chairman of the regional group due to confer with "opposite numbers" in the Benelux area. It will assemble in The Hague, Netherlands.

—★—

Making Toilet Soap

Molares Hermanos, soap manufacturers of Cartagena, Colombia, begin the manufacture of toilet soaps this month in their new plant in that city. The firm has heretofore been a leading manufacturer of laundry soaps. The company has vacated the old plant where it was located for many years and is now occupying the newly equipped factory, having purchased a complete installation of the latest type for milled toilet soap manufacture. They will continue the production of laundry soaps and detergents.

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P & G Profit Up

Procter & Gamble Co., Cincinnati, and its subsidiaries increased net profits to $40,352,086 in the nine months ended March 31 from $34,445,671 in the comparable period of the previous year. The profit for the most recent period, which is after provision of $49,841,000 for taxes, is equivalent to $4.18 a common share and compares with $3.57 a share for the nine months to March 31, 1953. Earnings before taxes were $90,193,086 compared with $77,712,671. In the nine month's period a year earlier the tax bill amounted to $43,267,000.

—★—

British Syndet Report

Effects of the growing use of synthetic detergents do not justify any immediate alarm in users or in the public health services. This is the keynote of an interim report published recently by the Committee on Synthetic Detergents appointed a year ago by the British Minister of Housing and Local Government. Despite the widespread use of synthetics throughout the country the incidence of dermatitis is not significantly greater than it was when soaps and alkalis were the only common washing products. There is no evidence so far for ascribing any ill effects to ingestion of possible minute traces of detergents left on dishes, etc., after washing. The excellent cleansing properties of synthetics may, by removing grease and curd, either open up the possibility of corrosion in domestic plumbing systems where it did not exist before, or expose to view corrosion previously hidden.

The most serious problems before the committee, according to the report, are concerned with sewage treatment and disposal of the resulting effluents. Foam is today being produced at many sewage works—sometimes to a height of several feet—during the stages of purification at which aeration occurs, and it is most marked at works where the activated sludge method is used.

This foam causes serious inconvenience, but at some works it constitutes a danger to the operators and a nuisance to the neighborhood. In districts where a special process has been adopted to deal with particular industrial wastes the presence of detergents may have important and peculiar implications; but fortunately there are few such districts. However, if the presence of these compounds in the sewage is causing a worsening in the quality of effluent at any works, there is cause for serious concern, particularly since many works effluents are discharged to rivers. The committee is giving special attention to this question.

The *Interim Report of the Committee on Synthetic Detergents* can be obtained from His Majesty's Stationery Office, London, W.C. price 4d.

—★—

C-P Builds in Louisville

Construction work on a new two-story office building at the northeast corner of Fourth and Ormsby Sts., Louisville, Ky., was begun recently by Colgate-Palmolive Co., Jersey City, N. J. The new building is to be a 122 x 177 foot, air-conditioned brick and stone structure. It was designed by Joseph and Joseph, architects. The new building will house approximately 250 employees, and will be completed next year. A 130 x 190 foot parking lot across Ormsby on the southeast corner at Fourth will be set up to accomodate 78 cars.

Solvay Names Five

Five appointments in the executive office of Solvay Process Division, Allied Chemical & Dye Corp., New York, were announced May 4 by A. B. Chadwick, Solvay president: Denman Peniston has been appointed assistant to the president and is succeeded by John H. Elleman as director of sales. Arthur Phillips, Jr.; Harry R. Stoothoff, and Neal M. Draper were named assistant directors of sales.

Mr. Peniston started with Solvay as an office boy over forty years ago. He has been salesman, assistant manager and manager of the New York branch, and assistant director of sales. Three years ago he became director of sales.

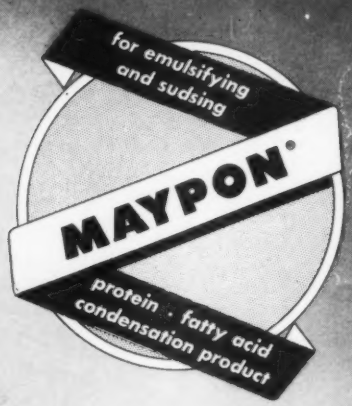
A graduate of Purdue University and the United States Military Academy, Mr. Elleman joined Solvay in 1935 as an engineer in the technical service section. During World War II, Colonel Elleman served with the Corps of Engineers and was district engineer in Syracuse for three years. Prior to his new appointment Mr. Elleman was assistant director of sales.

Mr. Phillips, with Solvay since 1929, was appointed manager of the Detroit sales office in 1946 and assistant to the director of sales in 1951. Mr. Stoothoff joined the firm also in 1929. First a salesman at the Chicago branch, he later became branch manager and manager of the special alkalies and cleansers

Denman Peniston

John H. Elleman

for



MILDER COSMETICS

MAYPON 4 C

A HIGHLY PURIFIED

PROTEIN—FATTY ACID—CONDENSATE

satisfying the Draize-Woodward eye irritation test in all concentrations

ANIONIC • LIME STABLE • HIGHLY SUDSING

Specifications

Form and color	Light tan clear liquid
Specific gravity	1.070 to 1.090
Solids	35 to 37%
pH	6.3 –7.3
Active Ingredients	(approx.) 33 to 35%
Solubility in water	In all proportions
Iron	Less than 20 p.p.m.

Applications

Shampoos

Permanent cold wave solutions

Liquid bath preparations

Cosmetic creams

MAYWOOD CHEMICAL WORKS

MAYWOOD, NEW JERSEY

ESTABLISHED 1895

section. Both men are graduates of Lafayette College.

A graduate of Washington University, Mr. Draper came to Solvay in 1935 as a salesman, rose to branch manager of the St. Louis area in 1947 and, four years later, to manager of the ammonium and potassium section.

— ★ —

Armour Advances Two

The chemical sales division of Armour & Co., Chicago, advanced recently T. F. Yuschik to the position of sales manager of the industrial oils department and H. R. Bishop to the post of fatty acids sales manager.

Mr. Yuschik has been assistant manager in Armour's fatty acid sales department for the past two years. Mr. Bishop has spent three years as the firm's sales representative in the Milwaukee district. His previous associations include Pennsylvania Salt Manufacturing Co., Philadelphia.

— ★ —

Safety Award to Magnus

Percy C. Magnus, president of Magnus, Mabee & Reynard, Inc., New York, recently received the Ralph Horgan traffic safety award, an inscribed gold wrist watch, in recognition of his contributions to traffic safety as president of the Citizens Traffic Safety Board of the City of New York. The presentation was made at the annual dinner of the Greater New York Traffic Council, held at the Hotel Statler early last month.

Equipment Sales Agency

Kenneth S. Valentine, formerly New York manager for Patterson Foundry & Machine Co., East Liverpool, O., and prior to that sales manager for the Turbo-Mixer Corp., has established his own business in New York as sales agent for equipment manufacturers. Initially he will represent Manton-Gaulin Co., Everett, Mass., and Stevenson Co., Dayton, O., in the New York area. Manton-Gaulin make homogenizers and high pressure pumps, and Stevenson produces liquid and dry mixers, mills, kettles and other allied equipment.

Kenneth S. Valentine

Mr. Valentine was the first president of the Chemical Equipment Sales Engineers Association of New York. He is co-author of the Mixing Section of Perry's Chemical Engineers' Handbook. Sixteen patents on mixing devices have been issued to him and he has been a frequent contributor to the literature on mixing and dissolving problems. His New York headquarters are located at 112 West 81 St., New York, 24.

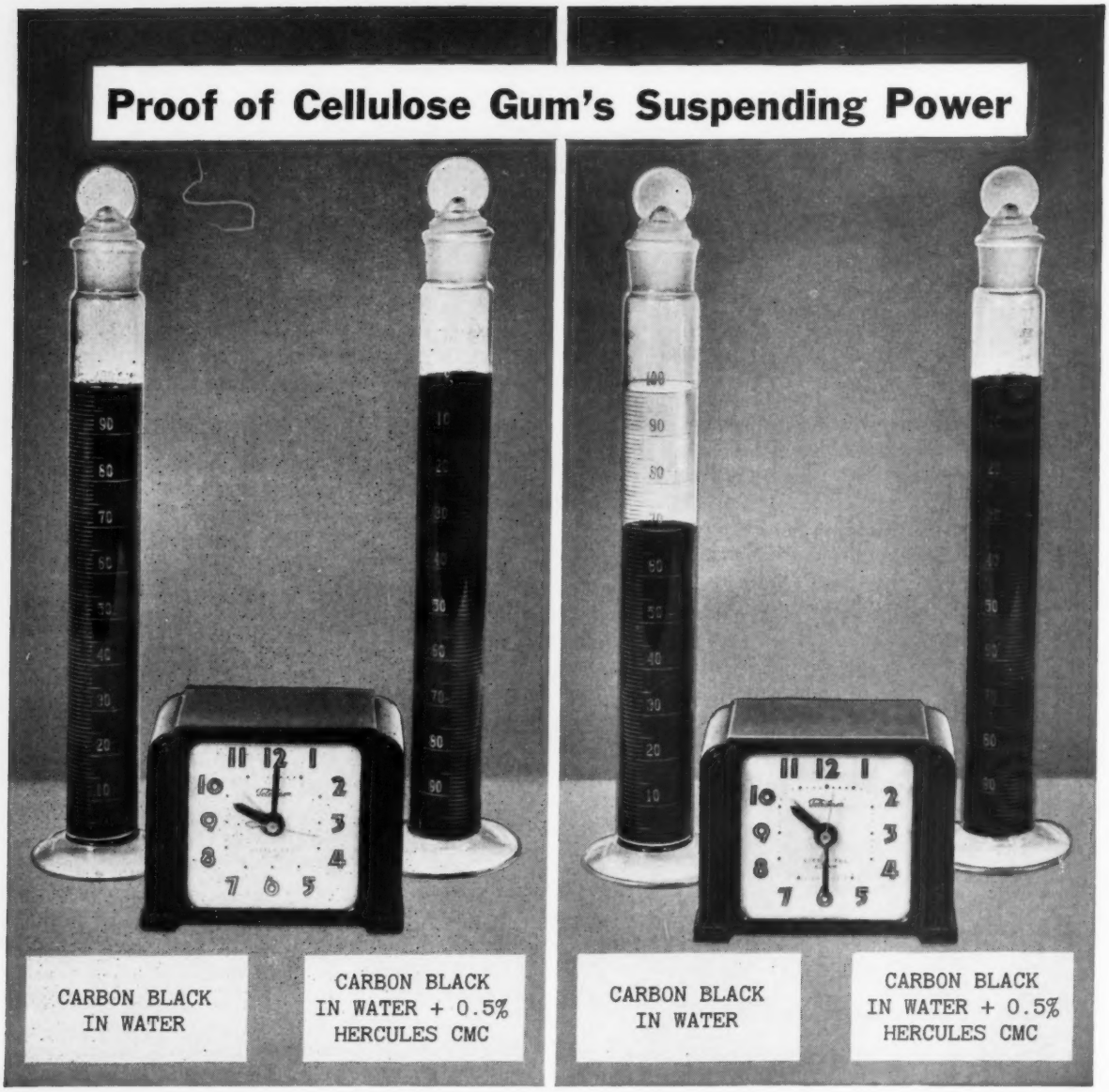
— ★ —

Visit Amer. Potash Plant

The main plant of American Potash & Chemical Corp. at Trona, Calif., was inspected last month by forty-four invited guests, all members of the chemical industry located in the southern California area. The Trona operation produces approximately 750,000 tons of various chemicals yearly from brine pumped from beneath dry Searles Lake.

Peter Colefax, American Potash president, and the firm's western sales and technical executives were present. Guests included among others: Ralph O. Bockhold and Cecil Cox, both of Los Angeles Soap Co.; Charles T. Atwood and William J. Moke, both of Lever Brothers Co.; Herbert Conrad, Diversey Corp.; Ray L. Geiler, Richard G. Crenshaw, and Charles W. Stager, all of A. R. Maas Chemical Co., Division of Victor Chemical Works; Reed Davis and Pat Moore, Purex Corp., Ltd.; Lester Fahy, X-L Laboratories Inc.; Paul Fisher and Bernard P. Harris, both of L. H. Butcher Co.; G. V. Vinger, Turco Products, Inc.; and Steve Sevougian, Dow Chemical Co.

Members of the chemical industry of Southern California assembled in front of plane which flew them to visit the American Potash and Chemical Corp. plant at Trona, Calif.


Proof of Cellulose Gum's Suspending Power
CARBON BLACK IN WATER
CARBON BLACK IN WATER + 0.5% HERCULES CMC
CARBON BLACK IN WATER
CARBON BLACK IN WATER + 0.5% HERCULES CMC

After thirty minutes, carbon black mixed in water has shown noticeable settling. Addition of only 0.5% of cellulose gum completely stabilizes the suspension and prevents settling even after six months.

THIS ECONOMICAL SUSPENDING AGENT MEETS A HUNDRED AND ONE NEEDS

This photograph demonstrates the excellent solids-suspending properties of cellulose gum (purified Hercules® CMC). By adding merely 0.5% to the carbon black-water mixture, the carbon black remains thoroughly suspended—and will, indefinitely.

Hercules cellulose gum has exceptionally high purity (99.5%+); is compatible with a wide variety of gums, plasticizers, and resins; is insoluble in organic solvents; and is uniformly high in quality from lot to lot. Write for testing samples, indicating proposed uses so we may determine the proper types.

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HERCULES POWDER COMPANY
INCORPORATED
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CM54-3

Atlas Advances Van Winkle

Atlas Powder Co., Wilmington, Del., has named Dixon C. Van Winkle to manage the New

Dixon C. Van Winkle

York sales office of its chemicals department, it was announced recently. Mr. Van Winkle succeeds L. G. Parkinson, who resigned this post to join Lever Brothers Co., New York.

Before coming to Atlas in 1952 as a special sales assistant, Mr. Van Winkle was with Velsicol Corp., Chicago, and with Julius Hyman Co., Denver.

★

Caddoo Gair V.P.

Re-election of the board of directors and election of William H. Caddoo as vice president in charge of boxboard operations of Robert Gair Co., New York, was announced by George E. Dyke, president. Norman F. Greenway and Raymond F. DeVoe, vice presidents, were advanced to senior vice presidents. The rest of the officers were re-elected.

Mr. Caddoo joined Gair in 1933. In his new post he succeeds Herman Whitmore, who is doing restricted work for Gair on the West Coast owing to health reasons.

William H. Caddoo

★

Names Two Directors

Joseph A. Neubauer, technical director for Columbia-Southern Chemical Corp., and David G. Hill, vice president in charge of glass manufacture for Pittsburgh Plate Glass Co. were recently elected to membership on the board of directors of Columbia-Southern Chemical Corp., Pittsburgh, wholly owned subsidiary of Pittsburgh

Joseph A. Neubauer

Plate Glass Co. Mr. Hill's election fills a vacancy created by the retirement of Emmet D. Griffin. Mr. Neubauer's election increases the board membership from 10 to 11 and provides representation on the board for the firm's expanding technical operations.

A chemical engineering graduate of Case Institute of Technology, Mr. Neubauer joined Columbia-Southern in 1933. He was appointed technical advisor to the company in 1946 and has served as technical director for the past five years. Twice since World War II he has served abroad as scientific consultant for the Commerce Dept.

Breck Advances Waide

Walter E. Waide, Jr., since 1946 in the research and development laboratory of John H. Breck,

Walter E. Waide, Jr.

Inc., Springfield, Mass., has been advanced to the position of chief manufacturing chemist at the firm's main plant in West Springfield, it was announced recently. Mr. Waide was graduated in chemical engineering from Northeastern University, Boston, in 1941.

★

Fitzgerald in New Post

Fred J. Fitzgerald, with Yardley of London, Inc., New York, since 1936, has been advanced to the post of assistant sales manager, it was announced recently by John F. Bales, vice president in charge of sales. Mr. Fitzgerald is vice president of the New England Toilet Goods Association.

Fred J. Fitzgerald

Since the Days of the "Stage Coach..."

CHECK YOUR NEEDS FROM THIS LIST

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VEGETABLE OILS

Babassu, Castor, Cocoanut, Corn, Cottonseed, Olive, Palm, Peanut, Sesame, Soybean

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ANIMAL FATS

Sperm Oil, Oleo Stearine, Lard Oil, Neatsfoot Oil, Grease, Tallow, Lanolin

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FATTY ACIDS

Red Oil, Tall Oil, Tallow
Stearic Acid
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Cottonseed and Soybean Fatty Acids

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ALKALIES

Caustic Soda, Solid, Liquid, and Flake; Soda Ash, Light and Dense
Carbonate of Potash, calcined and hydrated
Calcium Chloride
Tri Sodium Phosphate
Tetra Pyro Phosphate
Quadrafos Granular and Beads—a stable polyphosphate for water conditioning and mild but effective detergency.

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SILICATE OF SODA—Liquid powdered and solid.
METSO* 200—(Sodium Orthosilicate)
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METASILICATE—"Metso"* Granular.
METSO* DETERGENTS—*55, 66, 99.*
MAYPONS—Unique surface active agents; prolific foam; high detergency and emulsifying powers; suitable for cosmetic and industrial use.

AIR DRYETTES • **CHLOROPHYLL**

**Reg. U. S. Pat. Off., Phila. Quartz Co.*

Let us mix your dry private formulas

Established 1838

Welch, Holme & Clark Co., Inc.

439 WEST STREET NEW YORK 14, N. Y.

Warehouses in New York and Newark, N. J.

Hardesty Moves to Jersey

W. C. Hardesty Co., previously headquartered at 41 East 42nd Street, New York, has moved its main office to new and larger quarters at 25 Main Street, Belleville 9, N.J., it was announced recently by F. G. Merkel, president. The firm is observing its 28th year in the fatty acid and chemical fields.

—★—

Ellis Joins Charabot

Edgar R. Ellis, formerly connected with Parkinson Co., Katonah, N.Y., perfuming materials company, has joined Charabot & Co., New York, as a sales representative, it was announced recently by M. G. Couderchet, president. Prior to joining Parkinson, Mr. Ellis had been with Firmenich & Co., New York. He is active in the Cosmetic Industry Buyers and Suppliers Association and has been a member of the board of Cibs. Charabot is the sole distributor in the U.S. and Canada for Charabot & Cie, Grasse, France.

—★—

Montgomery Off to Europe

John H. Montgomery, president of Fritzsche Brothers, Inc., New York, sailed for Europe last month. Accompanied by Mrs. Montgomery, he is making a combined two months' business-pleasure trip of Italy, France, Switzerland, and Germany.

—★—

Detergents in *Dow Diamond*

Household cleaning compounds are classified and described in an illustrated article featured in the March Issue of *Dow Diamond*, published by Dow Chemical Co., Midland, Mich. Detergents are grouped into soaps and synthetics, into light duty products such as "Dreft", "Vel", and "Trend" and heavy duty washing agents such as "Surf", "News", "Tide", and "Fab", and into high foaming detergents and low foaming products which are recommended for use in automatic home washers. Dow enters this picture as a supplier of raw materials and intermediates for the manufacture of synthetics and soaps. It supplies ethylene oxide to the makers of low foaming detergents, caustic soda to go into soaps as well as high foaming granulated synthetics, alkanolamines for "suds boosters" used in high foaming and in liquid detergents such as "Joy", liquid "Lux", and "Glim". Dow's aromatics are used in the perfuming of soaps and synthetic cleaners.

New home of W. C. Hardesty Co. at headquarters of parent Wallace & Tiernan Co., Belleville, N. J.

—★—

Felton Shifts Berger

Herbert D. Berger, long time southwestern salesman for Felton Chemical Co., Brooklyn, N. Y., has been transferred recently to the firm's Chicago office.

Borax Co. Names Two

Maurice H. Pickard has been appointed director of technical service and product development and Roger W. Hinchman has been named eastern sales manager of the industrial division, it was announced recently by Pacific Coast Borax Co., Division of Borax Consolidated, Ltd., Los Angeles. Both men make their headquarters in New York.

Mr. Pickard, a graduate of Tufts College, was associated with American Smelting & Refining Co. in Mexico before joining Pacific Coast Borax Co. in 1936 as chief chemist of the Boron, Calif., plant. He joined the New York sales department in 1944. In his new post he continues in charge of technical service and is also responsible for the organization of a new department concerned with the development of various boron products.

A graduate of the Universities of California and Southern California, Mr. Hinchman was with E. I. du Pont de Nemours Co., Wilmington, Del., for nine years before joining Pacific Coast Borax Co. in 1943. His new responsibilities cover the firm's industrial sales in the area east of the Rockies.

R. W. Hinchman

Maurice H. Pickard

Save work—save money with easy formulating

DU PONT

*Duponol** **EP**
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DETERGENT

Now Du Pont brings you a new detergent, "DUPONOL" EP, that makes formulation of clear liquid shampoos easier—production less costly. See how "DUPONOL" EP can improve your product . . .

NEEDS LESS THICKENING—"DUPONOL" EP is far more responsive to thickening than other liquid shampoo detergents. You use smaller amounts of costly thickeners—and still get more detergent efficiency, more foaming properties, and a lower cloud point.

HIGHER CLEANSING POWER—"DUPONOL" EP creates maximum cleansing efficiency in your shampoo, yet its action is easily controlled to leave the hair soft and manageable.

EXCELLENT COLOR STABILITY—"DUPONOL" EP maintains its light color and low cloud point through exposure to heat, light and shelf life.

FIRST TWO-IN-ONE DETERGENT—"DUPONOL" EP is the first detergent on the market that formulates into a wide variety of both clear liquid *and* liquid cream shampoos. Save money, save storage space with a single detergent for both types of shampoo!

Du Pont has developed and tested dozens of shampoo formulations based on "DUPONOL" EP. Write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Div., Wilmington 98, Delaware, for your copy of "**'DUPONOL' EP SHAMPOO FORMULATIONS.**"

*Du Pont Trade-Mark for Surface-Active Agents

DU PONT *Duponol* **EP**
REG. U. S. PAT. OFF.
DETERGENT

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Consumer Group Rates Toilet Soaps

RESULTS of a study investigating 19 brands of milled toilet soaps and "Lowila" synthetic detergent bar are published in the April issue of *Consumers' Research Bulletin*, publication of Consumers' Research, Inc., Washington, N.J. The twenty bars were tested for conformance with Federal specifications for milled toilet soap (Ps-621c) and for coconut oil and/or palm-kernel oil content. CR does not recommend any soap containing more than 20 per cent of the total fat content in the form of these two oils. Wherever the free fatty acid content of the soap exceeds the limit set by the United States *Pharmacoepia* for *sapo durus* (0.23 per cent calculated as oleic acid) the fact is noted in the listing.

Only two brands are recommended in group A: "Kirkman Complexion Soap", made by Kirkman & Son Division of Colgate-Palmolive Co., Jersey City, N.J., and "Conti Olive Oil Castile Soap", of J. B. Williams Co., Glastonbury, Conn. Kirkman contains 15 to 20 per cent of coconut or palm kernel oil, Conti contains none, while both fully conform with the Federal specifications.

Group B, intermediate, comprises brands conforming with Federal specifications but containing coconut and palm-kernel oils in excess of 20 per cent of the total fat content. In this group "Camay Toilet Soap," Procter & Gamble Co., Cincinnati; "Lifebuoy Health Soap", Lever Brothers Co., New York; "Palmolive", Colgate-Palmolive Co., Jersey City, N.J.; "Swan Floating Toilet Soap", Lever Brothers Co.; and "Dial Deodorant Bath and Toilet Soap", Armour & Co., Chicago, were found to have free fatty content slightly above acceptable limit. Other brands in group B are "Ivory," Procter & Gamble Co.; "Sweetheart Toilet Soap", Manhattan Soap Co., New York; "Woodbury," Andrew Jergens Co., Cincinnati; "Wrisley Pine Soap," Allen B. Wrisley Co., Chicago; "Charles Antell Soap", Charles Antell, Inc., Baltimore; and "Avon Pine Soap", Avon Products, Inc., New York.

Group C, not recommended, failing to meet F.S. on one or more points, is made up as follows: "Cashmere Bouquet Toilet Soap", Colgate-Palmolive Co., matter insoluble in water too high, percentage of coconut and/or palm kernel oil over 30 per cent; "Lux Toilet Soap," Lever Brothers Co., matter insoluble in water too high, f.f.a. content slightly above acceptable limit, over 20 per cent coconut oil and/or palm kernel oil; "Fresh" Deodorant Bath and Toilet Soap", Pharma-Craft Corp., New York, contains rosin, f.f.a. slightly above limit: over 20 per cent of the two oils; "Lava Soap," Procter & Gamble Co., failed by a considerable margin to meet F.S. on four requirements: f.f.a. considerably above limit; coconut and palm kernel oil content exceedingly high; "Cuticura Soap", Potter Drug & Chemical Corp., Malden, Mass., analysis indicated presence of rosin, 15 to 20 per cent coconut and/of palm kernel oil; "Lowila", Westwood Pharmaceuticals, Buffalo, N.Y., failed to meet F.S. on two requirements, f.f.a. high, coconut oil and palm-kernel oil content high; and "Yardley Old English Lavender", Yardley Inc., New York, matter insoluble in water too high, f.f.a. slightly above limit, over 20 per cent of coconut and/or palm kernel oil.

—★—

New Diamond Executives

The election of Raymond F. Evans as chairman of the board and John A. Sargent as president of the company, was announced by Diamond Alkali Co., Cleveland, April 13. Evans was formerly president, and Mr. Sargent, executive vice-president. Diamond's 10 present directors were re-elected, and all other officers were re-named to their present posts. Mr. Sargent's former position as executive vice-president remains unfilled temporarily.

R. F. Evans J. Sargent

Mr. Evans, 45 years old, and a veteran executive of Diamond, had been president since 1947, having previously been executive vice-president.

The new Diamond president is 44 years old. He joined the company in 1946, and was elected executive vice-president in 1948.

—★—

Perfumers Add Members

The American Society of Perfumers held its regular quarterly business meeting at the Advertising Club in New York, on April 21. The group elected the following applicants to membership: Elias Y. Balensuela, Felton Chemical Co., Brooklyn, N.Y.; John Hancock, Dow Chemical Co., New York; William B. Ringwood, Van Dyk & Co., Belleville, N.J.; and Walter A. Roy, Lever Brothers Co., New York.

The society discussed plans for the annual June Ladies Night.

—★—

Magnus Columbia Trustee

Robert B. Magnus, vice-president of Magnus, Mabee & Reynard, New York, has recently been elected a trustee of the Columbia University College of Pharmacy of the City of New York. Mr. Magnus joined the firm in 1918 soon after the death of his father who founded the company. He has been an active member of the executive committee of the Drug, Chemical and Allied Trades Section of the New York Board of Trade for many years, and has served as the group's treasurer, vice chairman and chairman. He is now a vice president of DCAT. He has been secretary and treasurer of the Essential Oil Association of the U.S.A. and serves as officer of numerous other trade associations.

Deodorants with G-11®

(Brand of Hexachlorophene)

remove the cause of body odor

Soaps, detergents, creams, colognes, sticks and lotions containing G-11 are making dramatic sales increases because they combat the fundamental cause of body odor.

Body odor, particularly underarm odor, is caused by the action of skin bacteria on perspiration. Research has shown fresh perspiration to be odorless until it is contaminated with skin bacteria. G-11 combats these bacteria and thus removes the basic cause of the odor.

G-11 remains on the skin, even from soaps which are thoroughly rinsed off with water. Thus the deodorant action persists for days. Persons who have used deodorants with G-11 for three and four years show no immunity to their action.

Over seventy scientific articles, mostly by independent researchers, have been published over the last ten years attesting to the antibacterial and deodorant performance of G-11.

In addition, G-11 is not perceptible while on the skin, has no harmful effect on clothing, is compatible with perfumes, is readily soluble in soaps and cosmetic formulations, and is non-staining and non-irritating.

Write now for technical bulletins and formulas for G-11.

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Fritzsche Fetes Leonhardt

A dinner and dance was held at the Starlight Roof of the Hotel Waldorf Astoria, New York, April 17 in honor of F. H. Leonhardt, chairman of the board and past president of Fritzsche Brothers, Inc., New York, on the occasion of his sixtieth anniversary with the firm. Over 400 associates and guests attended the affair, including executives and employees from the main office and the Clifton plant as well as sales representatives and all ten-year employees from the firm's nine U. S. branch offices and from its Canadian affiliate and Mexican agency.

John H. Montgomery, Fritzsche president, presented Mr. Leonhardt with an oil painting of the latter by Louise Alton, as an anniversary gift from all employees.

The presentation was followed by an address delivered by Mr. Montgomery, and by short speeches by vice presidents H. P. Wesemann, Ernest Guenther, and Joseph A. Huisking, all expressing admiration for Mr. Leonhardt's qualities and achievements and wishes for a happy and active future. Mary G. Neary, secretary to the chairman for many years, observed that their combined service with Fritzsche totaled just over 100 years. James McNamara, retired dean of the sales staff was called upon to speak, as was Charles Schneider, next oldest representative in point of service, who presented Mr. Leonhardt, on behalf of the firm's salesmen, with a gold framed testimonial surrounded by pictures of all 27 active men.

As a gift from Mr. Leonhardt, every person present received a pen and pencil set. Each guest also received a twenty-page cloth-bound booklet containing a reproduction of the portrait and a biographical sketch outlining Mr. Leonhardt's career.

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BIMS Announces Golf Dates

The first ladies' night of BIMS of Boston was held April 24 at Weston Golf Club, Weston. Golf outings for the summer season are scheduled as follows: June 24, Weston Golf Club; August 19, Dedham Country & Polo Club, Westwood, Mass.; and the final outing of the season September 15, Nashua Country Club, Nashua, N. H. At the recent BIMS of Boston winter party which featured a steak dinner and an evening of bowling, prizes were won by Harold Coleman, Rexall Drug Co.; Benjamin F. Sands, Richard Nippes, Columbia Southern Chemical Co.; Jack Conover, L. Sonneborn & Sons; Emory Wright, Jack Van Dewater, R. W. Greeff & Co.; Irving G. Loxley, Heyden Chemical Co.; and George Blake, Givaudan-Delawanna, Inc.

Duffy to International

International Minerals & Chemicals Corp., Chicago, has appointed Jay K. Duffy sales representative in the chemical sales department of the potash division in New York City, it was announced recently. Sales of caustic and carbonate of potash, refined potassium chloride, potassium sulfate, chlorine, and muriatic acid are his responsibility.

Mr. Duffy was formerly vice president of Joseph Turner & Co., Ridgefield, N.J., and was previously associated with American Cyanamid Co. and Riches-Nelson, Inc., New York.

At dinner dance commemorating F. H. Leonhardt's 60th anniversary with Fritzsche Brothers, Inc., New York, of which he is chairman, John Montgomery, president, presents him with oil painting top center. Below, employees, wives and friends at dinner in the Starlight Roof of the Waldorf Astoria Hotel.

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Simple statement of fact . . . yet of profound importance to the success of so many products. Pleasant fragrance adds a third dimension in product appeal and so often is the necessary ingredient for its success. Unfortunately, too many ill-advised perfumes are used for this purpose — perfumes that are inadequate for the job intended.

FELTON has specialized over the years in effective perfumes for all types of consumer and industrial products. That's why you'll always find us a reliable source of supply.

CORRECT PERFUMES FOR

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ABOUT YOUR PERFUMING OR NEUTRALIZING PROBLEMS. WE'LL GIVE YOU THE RIGHT ANSWER, without obligation.

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FLOOR CLEANERS
FLOOR WAXES
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FRUIT PEELERS
FRUIT WASHES
GLASS POLISHES
HAT CLEANERS
HARD WATER SOAPS
INSECTICIDE CARRIERS
INSECTICIDE SPREADERS
INSECT REPELLENTS
LABEL REMOVERS
LAUNDRY DETERGENTS
LAUNDRY SOAPS
LAUNDRY SOURS
LEATHER CLEANERS
LIQUID SOAPS
MECHANICS SOAPS
MEDICINAL SOAPS
METAL CLEANERS
PAINT CLEANERS
PAINT REMOVERS
ROSIN SOAPS
RUG SHAMPOOS
SALT WATER SOAPS
SCALE REMOVERS
SCOURING POWDERS
SHAMPOOS
SHAVING CREAMS
SOAP POWDERS
SOFT SOAPS
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WETTING AGENTS
WOOL SCOURERS

to make any mixture a better mixture

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AMERICA'S LEADING SYNTHETIC DETERGENT

better because it washes • wets • disperses foams • emulsifies • in hot or cold solutions at any pH • at one low cost.

The complete Nacconol line provides a choice of 15 physical forms and active-ingredient concentrations. It includes six forms and strengths of flake material; three forms of powder; two forms of bead and four liquid concentrates. Phone or write our nearest office for technical data on the forms you require.

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San Francisco 5, Cal., 517 Howard St.	SUtter 1-7507	Chattanooga 2, Tenn., James Building	CHattanooga 6-6347
Portland 9, Ore., 730 West Burnside St.	Beacon 1853	Atlanta, Ga., 1216 Spring St., N. W.	Elgin 0308
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Allied Chemical

Here's a new source for caustic soda

If your plant is in this area you can now have liquid caustic soda delivered more rapidly, more dependably, than ever before.

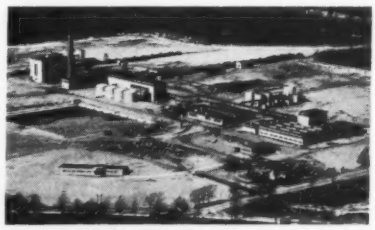
Here's what this new Hooker caustic soda plant at Montague, Mich., means to Midwest industry:

1. **Fast delivery.** You can have caustic soda delivered by tank car, loaded and dispatched within 24 hours of your call. In and near Chicago, tank car deliveries are made from Chicago stocks.
2. **Freight savings.** Depending on locality, you can save up to $2.84 per ton on freight. (To learn specific freight savings to your plant, just phone the Chicago office—CEntral 6-1311.)
3. **Dockside delivery.** On Lake Michigan and adjacent waterways you can have Hooker caustic delivered by barge—a new Hooker service (minimum 250 tons, dry basis). Savings are substantial.
4. **Prompt service you can count on.** At the Hooker sales office, 1 N. LaSalle St., Chicago, men are ready to help you plan efficient handling and storage, meet emergency needs, work out the most economical purchasing and delivery arrangements.
5. **Smoother, better processing.** You can use constant processing methods, and get consistent results with Hooker caustic soda. It's produced under careful control; more than 20 separate inspections and analyses protect its uniformity.

Tighten up your caustic supply line now

Many industrial leaders in the Midwest are already enjoying the convenience, economy, and dependable supply of Hooker caustic shipped from Montague.

You can have the same convenience and security *tomorrow*. Just pick up your phone and call us.



Caustic soda for Midwest Industry comes from this new $12 million Hooker plant at Montague, Mich. The plant is built over a tremendous bed of pure salt, which supplies the caustic-producing cells.

FOR FAST SERVICE, phone Chicago—CEntral 6-1311
SALES OFFICE: 1 N. LaSalle St., Chicago 2

HOOKER CHEMICALS

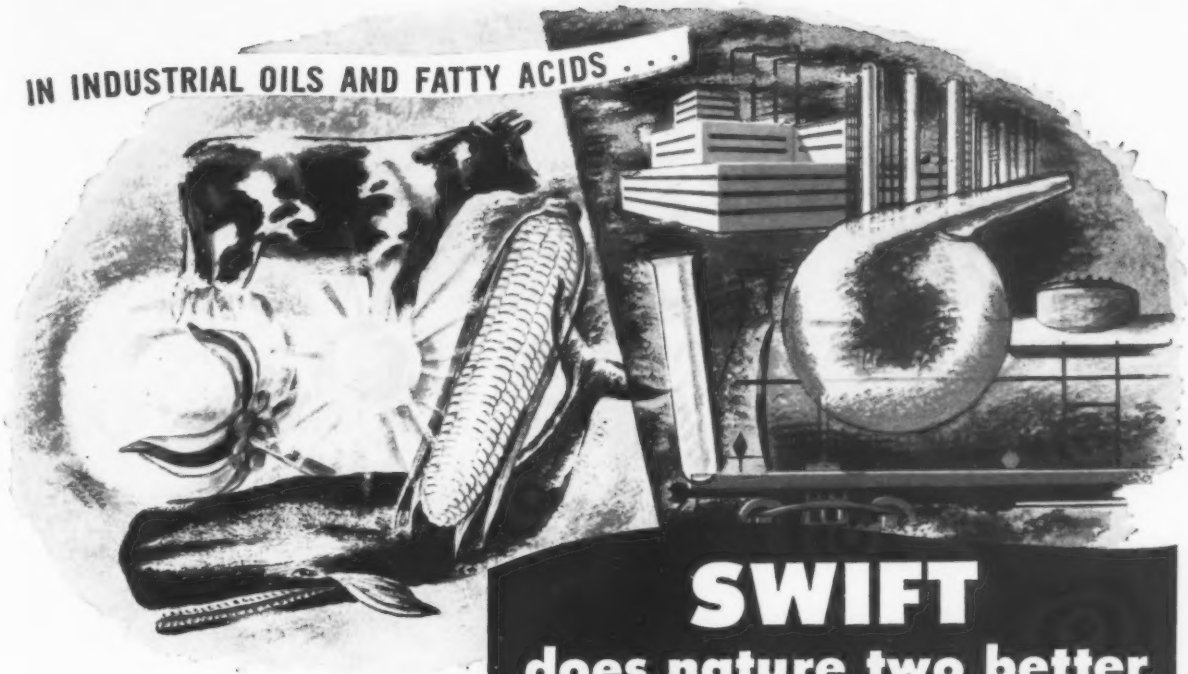
From the Salt of the Earth

4-656

HOOKER ELECTROCHEMICAL COMPANY

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

IN INDUSTRIAL OILS AND FATTY ACIDS . . .



SWIFT
does nature two better

Oleic Acid (Red Oil)
Animal Fatty Acids
Vegetable Fatty Acids
Stearic Acids
Hydrogenated Fatty Acids
Hydrogenated Glycerides
Spermaceti U. S. P.
Monoglycerides
Sulfonated Oils
Emulsifiers

● In producing industrial oils and chemicals, Swift does nature *one* better. In producing them with modern equipment under the strictest and most professional laboratory and production control, Swift does nature *two* better.

Through extensive plant facilities in Hammond, Indiana, Harrison, New Jersey, and Chicago, Illinois, Swift oils and fatty acids are manufactured from animal, vegetable and marine sources. Because of these facilities and experienced personnel, Swift engineers are able to derive the *most* from the raw materials with which they work. The result? . . . a variety of versatile, quality products and product combinations to meet a wide variety of specialized needs.

Yes, in manufacturing industrial oils and chemicals, Swift does nature *one* better—but it is because Swift *makes* Swift products that you can depend upon their quality . . . and can *rely* on Swift for your industrial oil and fatty acid needs.

Why not check your requirements from the list at the left? Use the coupon below to obtain further information.

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

Call Swift for INDUSTRIAL OILS and FATTY ACIDS

Another of Swift's Products for Industry

USE THIS COUPON FOR FURTHER INFORMATION

Swift & Company, Industrial Oils Dept.
1834 165th Street
Hammond, Indiana

Please send data on the following products:

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Company _____

Address _____

City _____ *Zone* _____ *State* _____

How to Bag a Sales Increase!

Track down the right fragrance for your product. And you can do it by calling our nearest office. Our experts will gladly search from Abyssinia to Zanzibar for the *one* fragrance that whispers "buy" to your prospects.

Write, or call us—soon!

COVROLS, NAUGAROMES — For various industrial and commercial uses.

SOAPOLS—For bar, paste and liquid soaps.

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from the **EMULSOL** lab

A thought or two about things new and interesting in the field of surface-active chemistry . . .

solving solvent safety

Have you any old diesel locomotives, ship's oil bunkers or auto engines that need degreasing? It'll be a lot safer if the solvent with oil and water soluble soils are emulsified away with EMCOL H50A or any of its cousins.

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CHEMICAL WEEK

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for Tough EMULSION DEGREASING jobs...

when you formulate concentrates with Emulsifiers

EMCOLS H-50A or H-52

Emulsol "Soapless" degreaser emulsifiers are taking top honors for better performance because of:

1. Lower emulsifier levels for reduced costs—
2. Higher solvent concentration for increased degreasing loads—
3. Greater spontaneity of emulsion with hot or cold water—
4. Complete hard or soft water range compatabilities—
5. Choice of "protective film" or oil-free rinsability—
6. No sludging or scumming to clog nozzles—
7. Safer solvent adaptability minimizing toxic hazards—
8. Liquid emulsifiers for simplified pumping and blending—
9. Balanced component blended for uniform performance control—
10. Non-staining action to degreased metal surfaces—
11. Reserve "surfactant-power" to lower surface tension, suspend soils, and to clean water-soluble soils in addition to degreasing action—
12. Suitable for either emulsifiable or circulating emulsion systems.

ESPECIALLY EFFECTIVE

for the unusual degreasing requirements of such industries as

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You are invited to consult in confidence with your local Emulsol technical representative or our emulsion specialists.

THE EMULSOL CORPORATION

59 EAST MADISON STREET • CHICAGO 3, ILLINOIS, U.S.A.

Propylene glycol U.S.P., produced by Carbide since 1931, plays many important roles in the Drug, Cosmetic, and Perfume industries.

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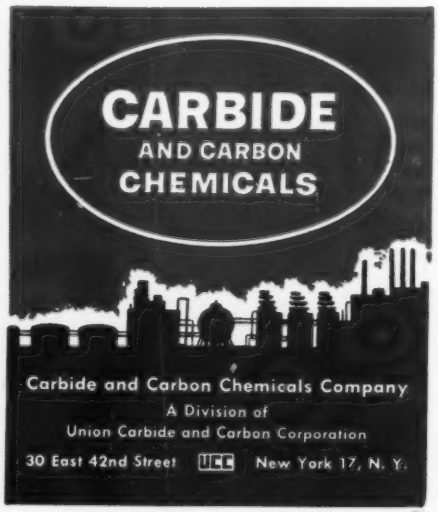
Drugs . . . More versatile than most generally used solvents, propylene glycol dissolves many pharmaceutically active substances. Consider it as your choice when preparing tinctures, solutions, and elixirs.

Cosmetics . . . Try propylene glycol in your cosmetic creams, lotions, and shampoos. This hygroscopic, water-soluble liquid enhances the softening action upon the skin and prevents "rolling" or drying out of the creams while in use, or in storage. In lotions and shampoos, propylene glycol couples the oil, lanolin, and soap in water.

Perfumes . . . An excellent solvent for most perfumes, propylene glycol allows a rapid and complete dispersion of ingredients throughout the preparation.

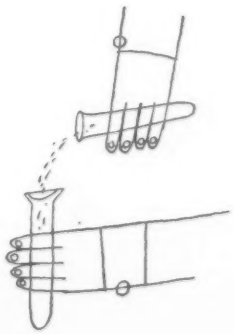
Whatever your use, propylene glycol from Carbide and Carbon will give top performance at your command. For further information write for your copy of the "Emulsions Booklet," (F-4186). Offices in principal cities. In Canada: Carbide Chemicals Sales Company, Division of Union Carbide Canada Limited, Toronto.



YOU GET UNIFORM BLENDS

WITH ORVUS AB GRANULES

- In choosing a detergent for converting purposes, one essential must be its ability to blend readily and intimately with other ingredients. Here is one of several important advantages you'll find in Orvus AB Granules.
- Orvus AB is an unusually efficient synthetic detergent of the alkyl aryl sulfonate type. A neutral "blown" product in uniform, free-flowing granular form, Orvus AB has exceptional detergent, sudsing, wetting, dispersing, and emulsifying properties.
- The surfaces of Orvus AB Granules are designed to minimize stratification, sifting or settling. You get *uniform* blends with Orvus AB Granules--as well as freedom from gumminess.
- Inquiries regarding the application of Orvus AB Granules to your particular type of product are welcomed. The technical help and advice of our research people are at your disposal—without obligation.



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AMERICA'S LARGEST MANUFACTURERS OF SOAPS AND SYNTHETICS

Cosmetic Manufacturers

For creme and paste shampoos . . .

SODIUM LAURYL SULFATE from Rohm & Haas

Full-scale production of Sodium Lauryl Sulfate was started during February. It is now available in drum and tank-car quantities. Samples and complete technical data will be sent on request for both grades offered: TRITON AS-35 (paste) and low-salt TRITON AS-30 (liquid).

These detergents are manufactured under close chemical supervision from fatty alcohols produced in our own plants. Every lot of TRITON AS-30 and TRITON AS-35 that is delivered to your plant—whether one drum or a tank car—will meet your rigid standards for purity and uniformity. Use the coupon attached below for complete information.

TRITON is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

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ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

ROHM & HAAS COMPANY
Washington Square, Philadelphia 5, Pa.

Send me technical data and samples of:

☐ TRITON AS-30 ☐ TRITON AS-35

NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

	TRITON AS-30 (low-salt liquid)	TRITON AS-35 (paste)
Active Ingredient	28-30%	28-30%
Free fatty alcohol	1.0-2.5%	1.0-3.0%
NaCl	0.5% max.	2.0% max.
Na_2SO_4	1.5% max.	2.0% max.
pH at 5% active	7.0-8.5	7.0-8.5
Color, VCS	2 max.	2 max.
Iron, ppm	7.5 max.	7.5 max.

Bids and AWARDS

Sweep Compound Award

Federal Supply Service, Kansas City, Mo., awarded a contract for sweeping compound to Consumers Sweeping Compound Co., St. Louis, Mo., in a recent opening for miscellaneous supplies. Consumers bid was $2.45.

—★—

Deodorant Bids

In a recent opening for deodorant by the Federal Supply Service, New York, the low bids submitted were as follows: Educational Materials, Inc., New York, item two, 54 cents; Park Avenue Products Co., New York, item two, 54 cents; Reliable Chemical Co., Passaic, N. J., item one, 6 cents.

—★—

Submits Low Polish Bid

Trio Chemical Works, Inc., Brooklyn, N.Y., submitted the low bid of 49 cents in a recent opening for metal polish by the Post Office Department, Washington, D. C.

—★—

Floor Wax Awards

In a recent opening for miscellaneous supplies by Fort Lee, Va., awards for liquid floor wax went to Laurence Sanitary Co., item one, 99 cents and item two, $4.40, and American Sanitary Supply Co., item three, 73 cents. Both firms are located in Richmond, Va.

—★—

Low F.S.S. Soap Bids

Federal Chemical Co., Chicago, and Iowa Soap Co., Burlington, submitted the low bids on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Dallas, Tex. Federal bid 8.2 cents on item one, and Iowa 10.25 cents on item two.

—★—

Lee Low Chip Soap Bid

Lee Soap Co., Denver, won the award on 21,600 pounds of chip soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Denver. Lee bid $8.95 cwt, f.o.b. Denver, on item one, and $8.88 on item two, f.o.b. shipping point.

—★—

Soap Award to Fitzpatrick

Fitzpatrick Brothers Co., Chicago, won the award on 48,600 pounds of soap chips in a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta. The Fitzpatrick bid was 9.85 cents.

—★—

R&H, Carbide in Navy Bid

Rohm & Haas Co., Philadelphia, and Carbide & Carbon Chemicals Co., New York, were the low bidders on a wetting agent and detergent in a recent opening for miscellaneous supplies by the Navy Department, General Stores Supply Office, Philadelphia. Rohm & Haas bid $2.662 on item 1 a, and the Carbide bid was $2.893 on item 1 b.

—★—

FSS Soap Awards

In a recent opening for soap by the Federal Supply Service, Washington, D.C., Day & Frick Co. won the award on item one with a bid of 3.48 cents and National Milling & Chemical Co. was low with a bid of 9.95 cents on item two. Both firms are located in Philadelphia.

—★—

Low Navy Soap Bid

West Coast Soap Co., Oakland, Calif., submitted the low bid of $23,790 (7.93 cents on a pound) for soap in a recent opening for miscellaneous supplies by the Navy Purchasing Office, San Francisco.

—★—

Navy DDT Bids

Low bids on DDT insecticides in a recent opening for miscellaneous supplies by the Navy Purchasing Office, New York, were submitted by the following: Lebanon Chemical Co., Lebanon, Pa., $1.14 on item one; McCormick & Co., Baltimore, 19.18 cents on item two; and Chemical Compounding Co., Brooklyn, N. Y., 97 cents on item three.

—★—

Scouring Powder Award

B. T. Babbitt, Inc., New York, obtained the award on 8,737 cans of scouring powder in a recent opening for miscellaneous supplies by the Federal Supply Service, Denver. Babbitt bid 65 cents.

—★—

Navy Dispenser Bid

Pacific Coast Borax Co., Los Angeles, submitted the low bid of $2.40 on soap dispensers in a recent opening for miscellaneous supplies by the Navy Department, Philadelphia.

—★—

Cole Labs Low Soap Bidder

Cole Laboratories, Inc., Long Island City, N.Y., submitted the low bid of 27 cents on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, New York.

—★—

Atlas Floor Machine Award

Atlas Floor Surfacing Machinery Corp., New York, won the award with a low bid of $169.50 each on floor polishing machines in a recent opening for miscellaneous supplies by the Post Office Department, Washington, D. C.

—★—

Bids Low on Paste Soap

Wolf Soap Co., Brooklyn, N.Y., submitted the low bid of 7.1 cents on soap paste in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C.

—★—

Barco Herbicide Bid Low

Barco Chemical Co., Des Moines, Ia., submitted the low bid of $3.58 on a herbicide in a recent opening for miscellaneous supplies by the Federal Supply Service, Kansas City, Mo.

—★—

Thomas & Son Names Agent

I. P. Thomas & Son Co., Camden, N. J., recently appointed Phillip Brothers Chemicals, Inc., New York, exclusive selling agents for its triple superphosphate.

schimmel

for better smelling products

MASKING AGENTS

for all types of
industrial and semi-
industrial products.

If a clear fresh note is desired, or a floral or other note required—our laboratory can provide the answer.

Whatever your
odor masking or perfuming
problem may be, write us
for assistance.

SCHIMMEL & CO., INC.

601 West 26th Street, New York 1, N. Y.

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany notice of opposition.

Floor Sho—This for floor polish. Filed May 28, 1953 by Jaton Products Corp., Brooklyn N.Y. Claims use since December 22, 1952.

1 Year—This for automobile cleaner and polish. Filed June 15, 1953 by J. C. Branscombe, doing business under the style name of J. C. Branscombe Products, Chicago. Claims use since May 6, 1953.

Bright Leaf—This for insecticide-fungicide spray. Filed October 22, 1953 by Benjamin D. Smith, Jr., Sanford, N.C. Claims use since February 1951.

Kingtex—This for red ant poison and roach poison. Filed February 11, 1953 by Willis Rowe, doing business as Rowe Exterminating Co., Kingsville, Tenn. Claims use since June 1, 1947.

Prestone—This for automobile specialties. Filed June 3, 1953 by Union Carbide and Carbon Corp., New York. Claims use since on or about May 15, 1953.

"SWFKILL"—This for insecticides. Filed August 24, 1953 by Southwest Fertilizer & Chemical Co., El Paso, Tex. Claims use since June 1, 1948.

Stains Run from 101—This for sodium hypochlorite solution having cleansing, bleaching, stain removing, disinfecting, and deodorizing properties. Filed July 22, 1952 by Gardiner Manufacturing Co., Buffalo, N.Y. Claims use since about 1924.

Sage—This for toilet soap and shampoo. Filed March 6, 1952 by Sage Laboratories, Inc., New York. Claims use since January 11, 1952.

Kitchen-ease—This for detergent for general household, kitchen and laundry use. Filed May 26, 1952 by Max A. Gurvich doing business as Pacific Chemical Manufacturing Co., Seattle, Wash. Claims use since May 4, 1950.

Panda—This for pine oil disinfectant, cleaner, and deodorant. Filed October 3, 1952 by Standard Coffee Co., doing business as International Consumer Products Co., New Orleans, La. Claims use since January 1952.

Veg—This for grease removing, cleaning, and polishing compound. Filed March 16, 1953 by Chemicals & Materials Distributors Corp., Terre Haute, Ind. Claims use since February 4, 1953.

Lets—This for clothes washing compound. Filed December 19, 1952 by Dr. Andre Laboratory, Inc., Milwaukee. Claims use since July 1, 1952.

Sudsette—This for powdered detergents and soaps in individual portions for sudsing light laundry. Filed December 20, 1952 by Sudsette, San Francisco, Calif. Claims use since November 24, 1952.

Straw Hat—This for soap. Filed December 30, 1952 by Fabergé, Inc., New York. Claims use since September 1951.

Corn-Tex—This for skin cleanser containing corn meal. Filed April 10, 1953 by G. H. Packwood Manufacturing Co., St. Louis, Mo. Claims use since December 8, 1938.

Super-Solv—This for cleaning preparation. Filed April 13, 1953, by Super-Solv Products, Bakersfield, California. Claims use since September 8, 1952.

Austin's—This for cleaning preparation. Filed May 1, 1953 by James Austin Co., Mars, Pa. Claims use since May 1, 1890.

Salvingen—This for cleaning compound for surgical instruments, etc. Filed May 11, 1953 by Schenley Laboratories, Inc., New York. Claims use since March 3, 1953.

Wolco—This for liquid glass cleaner. Filed June 23, 1953 by the Wolcott Co., Hartford, Conn., by mesne assignments, to Wolco Products, Inc., Hartford, Conn. Claims use since April 30, 1953.

Boraxo—This for hand cleanser. Filed August 20, 1953 by Borax Consolidated, Ltd., doing business as Pacific Coast Borax Co. Division of Borax Consolidated, Ltd. London, England, and Los Angeles, Calif. Claims use since August 1953.

Poly-Self—This for liquid emulsion type floor wax. Filed February 19, 1953 by Rochester Germicide Co., Rochester, N. Y. Claims use since January 30, 1932.

FEL a Reefer-Galler Product—This for insecticide. Filed April 3, 1952 by Reefer-Galler, Inc., New York. Claims use since March 19, 1952.

Lucky Leaf—This for insecticide-fungicide dust and spray. Filed October 22, 1952 by Benjamin D. Smith, Jr., Sanford, N.C. Claims use since January 1951.

Banagerm—This for germicide, antiseptic, disinfectant, and deodorant. Filed June 8, 1953 by American Scientific Laboratories, Inc., Madison, Wis. Claims use since March 25, 1953.

Tem—This for antiseptic, germicide, and deodorant preparation. Filed October 29, 1953 by Lucus Products Corp., Toledo, O. Claims use since October 22, 1953.

Klean-Strip—This for liquid non-flammable paint and varnish remover. Filed May 4, 1951 by W. M. Barr & Co., Memphis Tenn. Claims use since May 22, 1946.

Lady President—This for face and hand soaps. Filed May 28, 1953 by Stanley Home Products, Inc., Westfield, Mass. Claims use since October 28, 1952.

Kleenmaster Brillianize—This for metal and glass cleaner. Filed June 29, 1953 by Chemical Products Co., Omaha, Nebr. Claims use since March 11, 1953.

Trip-Suds—This for detergents. Filed June 29, 1953 by Doyle-Decker, Inc., New York. Claims use since April 2, 1953.

endust—This for dust absorbent for application to dust mops and cloths as an aid in cleaning. Filed June 29, 1953 by Endust Corp., Washington, D.C. Claims use since on or about July 18, 1952.

Packer's Pine Tar Soap—This for soap. Filed December 4, 1952 by Packers Tar Soap, Inc., Mystic, Conn. Claims use since October 20, 1952.

hy-Kleen—This for hand cleaning emulsion. Filed July 31, 1953 by Ulysses K. Herwick, trading under the name Hywick Bee Bee Co., Akron, N.Y. Claims use since July 15, 1953.

Lincoln—This for powdered hand soap. Filed August 25, 1953 by Lincoln Clay Products Co., Lincoln, Calif. Claims use since August 8, 1953.

White Witch—This for hand cleaner. Filed October 8, 1953 by Barrington Products Co., Mount Vernon, N. Y. Claims use since September 25, 1953.

Bye—This for liquid household deodorant, cleanser, and disinfectant. Filed April 29, 1953 by West Disinfecting Co., Long Island City, N.Y. Claims use since April 1, 1953.

Kulkim—This for insecticides, fungicides and herbicides. Filed September 3, 1953 by Monsanto Chemical Co., St. Louis, Mo. Claims use since August 12, 1953.

Phenamin—This for fungicide and bactericide. Filed February 18, 1953 by By-Products Processing Laboratories, Inc., Long Island City, N. Y. Claims use since March 7, 1952.

Pure—This for white-wall tire cleaner. Filed August 13, 1952 by Pure Oil Co., Chicago. Claims use since on or about May, 1952.

SpotsGo—This for stain remover. Filed January 27, 1953 by A. L. Wilson Chemical Co., Kearny, N. J. Claims use since January 2, 1953.

RadGo—This for stain remover. Filed January 27, 1953 by A. L. Wilson Chemical Co., Kearney, N. J. Claims use since January 13, 1953.

Triodine—This for liquid iodine

(*Turn to Page* 121)

Dependable Source for Chemical Raw Materials

Robert McInnes, Jr., Sales Manager, King Manufacturing Co., makers of King-Of-All Kleeners, Flint, Michigan.

Wyandotte quality helps King-Of-All Kleener gain consumer acceptance

"We've been using Wyandotte Caustic Soda since 1933. We use it in our King-Of-All Sewer and Septic Tank, Drain Pipe, and Grease Trap Kleeners," states Robert McInnes, Jr., Sales Manager, King Manufacturing Co., Flint, Michigan.

"With our national distribution and growing volume, it is vitally important that we use uniform, high-quality, free-flowing Caustic in our products. Wyandotte provides this, and is always willing to assist us on any chemical problems which come up in our business.

"Wyandotte gives small consumers the same consideration as the large ones. We know. Wyandotte gave us good service when we were buying Caustic a drum at a time. Now, we buy in carload lots, have added modern, automatic packaging machines, trebled our production and still get the same fine service."

Whenever you buy chemical materials, it will pay you to investigate Wyandotte Chemicals as your source of supply. Wyandotte, a basic producer with its own sources of raw materials, has demonstrated its ability to work with industries on chemical requirements for more than 64 years. Wyandotte can serve your needs by the drum or carload, from plant or widespread distributor stocks . . . may we serve you? *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in principal cities.*

Wyandotte
CHEMICALS

HEADQUARTERS FOR ALKALIES

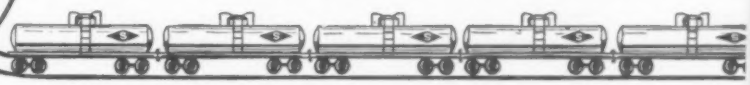
Soda Ash • Caustic Soda • Bicarbonate of Soda • Chlorine
Calcium Carbonate • Calcium Chloride • Glycols • Synthetic Detergents • Agricultural Insecticides • Soil Conditioners
Other Organic and Inorganic Chemicals

THE SWITCH IS TO...

FATTY ALCOHOL SULFATES

The new Stepan line of fatty alcohol sulfates can offer important advantages for use in a wide range of detergent formulations.

In heavy-duty detergent, bar detergent, liquid detergent, and shampoo formulations these fatty alcohol sulfates offer superior washing qualities, emolliency, and the elimination of scum and bowl rings for hard water areas. They can provide excellent detergency without excessive soaking and foam for on-the-job rug cleaners and for use in textile scouring compounds. Their superior emulsifying properties make them ideal, too, for use in skin creams or other products that are rubbed into the skin.



STEPAN FATTY ALCOHOL SULFATES . . . GENERAL SPECIFICATIONS

	% Sodium Alkyl Sulfate	% Unsulfated Alcohols	% Sodium Sulfate	% Sodium Chloride	% Moisture	pH
STEPANOL M 1, M 2	28.0-30.0	1.5-3.5	1.0-2.5	0.5-1.5	62.5-69.0	7.0-8.5

Write for free Samples...

Stepan fatty alcohol sulfates are available for use as an important component in your present formulation or in a combination from the extensive Stepan line of fatty alcohols and synthetic detergents as a completed formulation tailored to your particular requirements.

THE **STEPAN** CHEMICAL CO.

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Chicago 6, Illinois

FATTY ALCOHOLS · FATTY ALCOHOL SULFATES · BULK LIQUID DETERGENTS · SULFONATED OILS · AMIDES · FOAM STABILIZERS · ALKYLPHENOL POLYALKOXY SULFATES

A New Light on Stearic Acid

Candles burn cleaner when made with a Stearic Acid of low ash content. Century Brand Stearic has the lowest ash content of any on the market today. Careful selection of raw materials and care in processing make Century Brand Stearic Acid the best for candles.

Stearic Acid Esters are whiter when made with Century Brand Stearic Acids because of their exceptional heat stability. Glycerol Monostearates with colors of 5 Yellow and 1.0 Red (5¼" Lovibond) have been produced with Century 1220 Double Pressed Stearic Acid without bleaching.

Cosmetic creams and lotions stay lighter when made with Century Brand Supra Grade Stearic Acid. An iodine value of less than 1 combined with excellent stability make Century the top Stearic Acid for cosmetics.

For these and other uses there is a grade of Century Brand Stearic Acid to meet your requirements.

W. C. HARDESTY, CO., Inc.

Century Stearic Acid Products, Inc.

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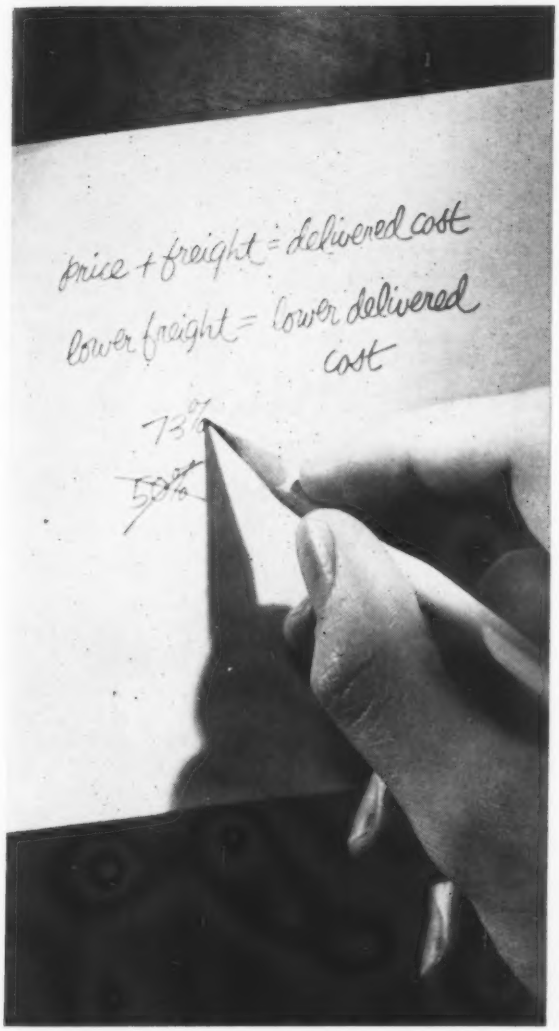

THE ECONOMIES OF 73% CAUSTIC SODA SOLUTION are no longer reserved for the largest users . . . lower shipping costs now make it the best form for you, too.

73% CAUSTIC SODA . . .

a little figuring may prove it your best buy!

FAST, DEPENDABLE DELIVERY of uniform 73% caustic solution is assured through use of Dow-owned tank cars. These 8,000- and 10,000-gallon cars are insulated, protectively lined, and fitted with nickel heating coils; unload from top or bottom by air pressure or pump. Frangible discs, protective plug cocks are two of the advanced safety features.

How long has it been since you have checked your caustic buying habits in the light of increasing cost factors? Higher freight rates are erasing the savings in 50% caustic solution for more and more users every day. Even users located near shipping points save money with 73%, since the higher price of even shorter distance hauls quickly wipes out the price difference between 73% and 50%.

73% caustic must be diluted when received, but most caustic users dilute 50% solution, too. The cost of additional handling equipment for dilution, when fairly amortized, becomes a small item in comparison to your over-all cost reduction.

If you are still buying 50% caustic solution, discussion in your plant and consultation with our Alkali Technical Service is indicated. Perhaps the comprehensive Dow Caustic Soda Handbook can help you in preliminary discussion. Ask your Dow sales representative for your free copy or write to THE DOW CHEMICAL COMPANY, Dept. AL 901G, Midland, Michigan.

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these were the results for calcium:

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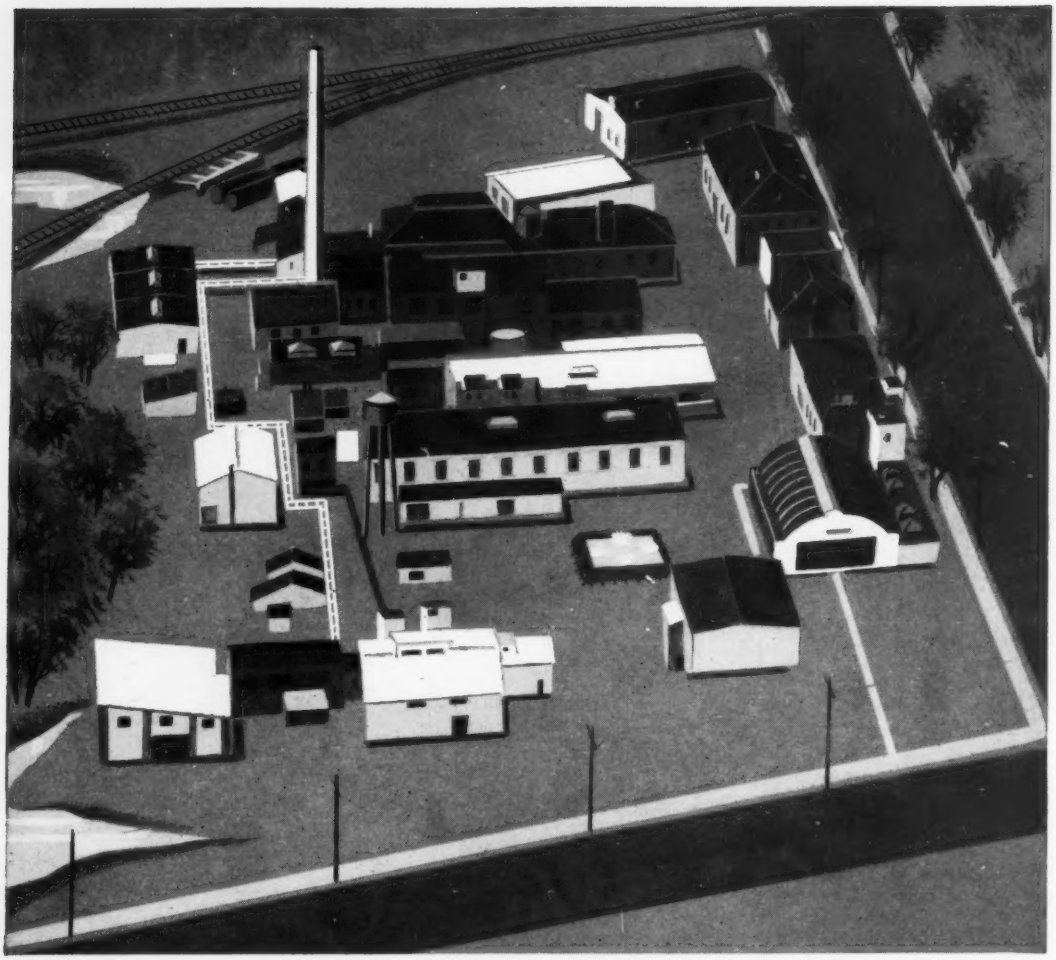

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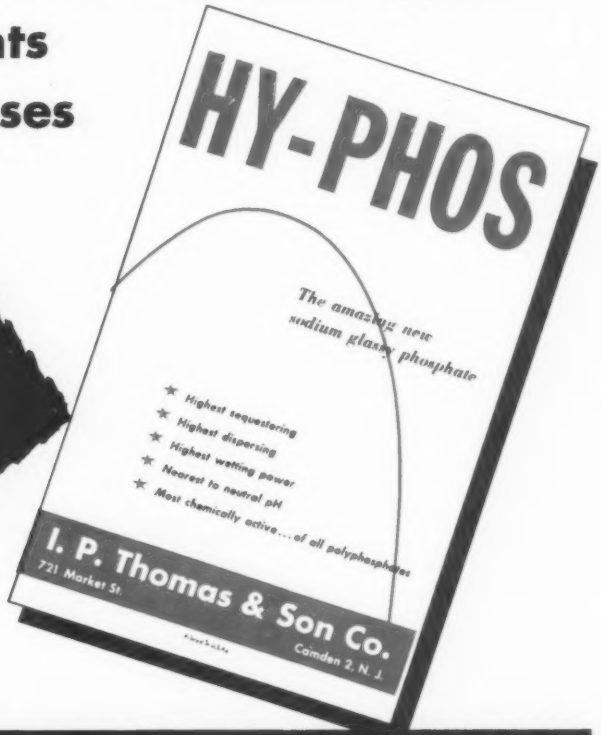
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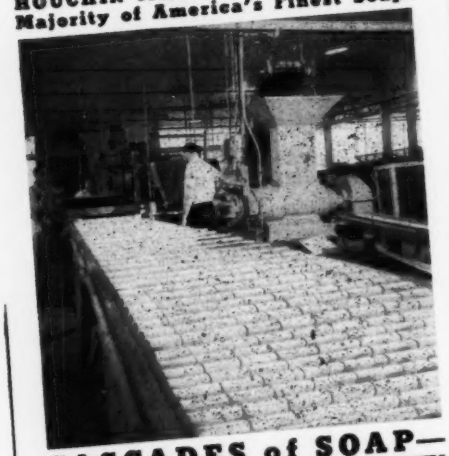

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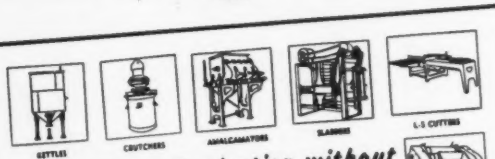

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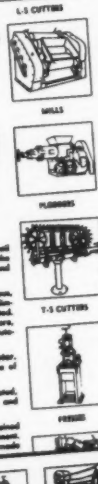

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A hydrometer method for

Measuring Emulsion Stability*

BY **H. L. Sanders,** Ninol Laboratories, Inc., Chicago, Chairman
H. R. Suter, Wyandotte Chemicals Corp., Wyandotte, Mich.
E. R. Garverich, Pennsylvania Salt Mfg. Co., Philadelphia

IN spite of the great industrial importance of emulsions, the technology of this field still remains more an art than a science. Selection of emulsifiers for a given oil, for example, must be carried out mainly by trial-and-error methods, with only a few rough rules of thumb to serve as guides. Stability of the resultant emulsion is also completely unpredictable, and considerable confusion even prevails as to how it should be measured and expressed.

Due to the interest of many members of the Chemical Specialties Manufacturers Association in this subject of emulsion stability, a subcommittee of the Soap and Detergent Scientific Committee was established to examine the present methods of measurement and terminology in this field and, if possible, to propose improvements. The present paper constitutes an initial report.

Since emulsions are theoretically unstable systems they can all be expected to show some degree of separation eventually, even though many types, such as floor waxes, are apparently stable for very long periods. In products like polishes and creams, which are expected to remain on shelves without separation for many months, the actual *rate* of separation is not important—either the product possesses long term stability or it does not—and evaluation methods are simply long drawn out storage tests.

In other cases, however, such as dry cleaning stock emulsions, cutting oil emulsions, and agricultural spray emulsions, separation usually takes place within a few hours or days, and here the exact rate of separation becomes important. A DDT emulsion that can be left in a spray tank overnight without separation occurring is preferable to one that settles out in a couple of hours.

Since emulsions of this type are most common in the agriculture field, a questionnaire was sent to a number of such firms covering their emulsion testing methods. Of the fifteen replying, it was found that in all cases the volume of cream and/or oil separating out after a given time was taken as the measure of stability. Although laboratories differed in manipulative details—some stirring vigorously, others slowly; some using graduates, others settling cones—nevertheless, the volume of separated material was the universally accepted measure of stability.

Although this type of test is certainly of value as a rough and rapid guide, it suffers from the fact that it is an empirical approach that does not measure the true rate of separation, since it is obvious that the volume of sediment or cream in a partially separated emulsion is a poor criterion. A large volume of flocculent sediment may weigh less than a small volume of dense sediment, so the larger sediment could mean less actual separation.

In other words, it would be more scientific to follow the weight of the separation phase rather than its volume.

This could be done, for example, by pipetting out samples at intervals from some point in the emulsion and analyzing them to find the weight of oil still remaining in suspension, but this would be impractically laborious. Optical methods might be used to follow the increase in "transparency" at some point as the particles settled out of the emulsion, but unpublished work performed elsewhere indicates that experimental difficulties could be expected because of the fact that the emulsion droplets are transparent.

It was finally decided to follow the stability by changes in density as indicated by a sensitive hydrometer floating in the emulsion. If a heavy oil is emulsified in water, then it is obvious that the density of the emulsion at any given plane is greater than 1.0, but approaches unity as the oil droplets leave that plane and settle to the bottom of the vessel. The theory of such systems has been worked out for cement dispersions by Biddle & Klein (1), and for soil suspensions by Downes (2), although the interest of these authors was in measuring particle size distribution rather than stability.

The apparatus used in the present investigation consisted of a glass tube 30 inches long and 30

*A report of the Chemical Specialties Manufacturers Association committee on emulsion stability. Presented at the 40th annual meeting, Dec. 4, 1953, Washington, D. C.

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mm I.D., holding about 500 ml of the emulsion to be tested. The hydrometer was one sold by Scharr & Co., Chicago, under their catalog No. 4600A, and covered the range 1.0000-1.0055 in divisions of 0.0005 units. This hydrometer was 14 inches long, and when immersed in the emulsion, the bulb floated at about the center of the long tube, with any sedimented cream or oil at the bottom being well out of reach of the bulb. Since this hydrometer was calibrated for 60°F., the emulsion tube was provided with a water jacket held at 60°F.

It was decided to use a DDT emulsion for test purposes, and a "concentrate" of the following composition was therefore made up:

Technical DDT	25%
Velsicol AR50	70%
Triton X155	5%

This was cooled to 60°F., then 100 grams was poured into 400 grams of distilled water at 60°F. in a liter separatory funnel. The emulsion was formed by inverting end-over-end fifteen times in fifteen seconds (fifteen half-turns), and was then run out into the emulsion tube, closing the stopcock in time to prevent foam from entering the column. The hydrometer (previously cooled to 60°F.) was immediately immersed, and readings were taken at the start and every hour thereafter without removing it.

At the beginning the density was greater than unity due to the dispersed heavy oil droplets, but as the globules slowly settled downward, the hydrometer readings began to approach unity. The results of two consecutive runs in one laboratory are plotted in Fig. 1.

Now, the difference between the density of the emulsion and the density of water can be proven to be directly proportional to the total weight of the dispersed oil droplets in a unit volume. For let D_o be the oil density, D_w the water density, W_o the weight of oil particles in 1cc of emulsion, and W_w the weight of water in 1cc of emulsion, then the measured density of the emulsion (D_e) can be written:

$$D_e = W_o + W_w$$
$$= W_o + D_w - \frac{W_o}{D_o} D_w$$

hence $$D_e - D_w = \left(1 - \frac{D_w}{D_o}\right) W_o$$
$$= K W_o$$

In other words, the extra density of the DDT emulsion above unity is always directly proportional to the weight of oil remaining in suspension. For example, if the initial density of this emulsion were 1.0100, and after a time became 1.0025, this would indicate that 75% of the emulsified oil had separated by creaming or oiling out. In other words the hydrometer reading (above unity) is proportional to the weight of oil in suspension.

It was decided to define the stability of an emulsion as being the time required for half of the dispersed material to settle out, i.e., for the density to fall halfway to unity. For the two curves in Fig. 1 it was found that this Half Separation Time (HST) was 1.48 hr. and 1.64 hr., or an average of 1.56 hr.

In order to establish the reproducibility of the method, the above experiment was repeated in exact detail by the other two collaborating laboratories. Good agreement was obtained, the average HST values found being 1.60 and 1.75 hr.

It would therefore appear that the stability of relatively unstable emulsions of this type can be described by a single value obtained from hydrometer measurements. This would be a great advance over the complex systems of notation often used in describing rate of creaming.

So far, the experiments described have dealt with heavier-than-water systems. Theoretically, exactly the same considerations

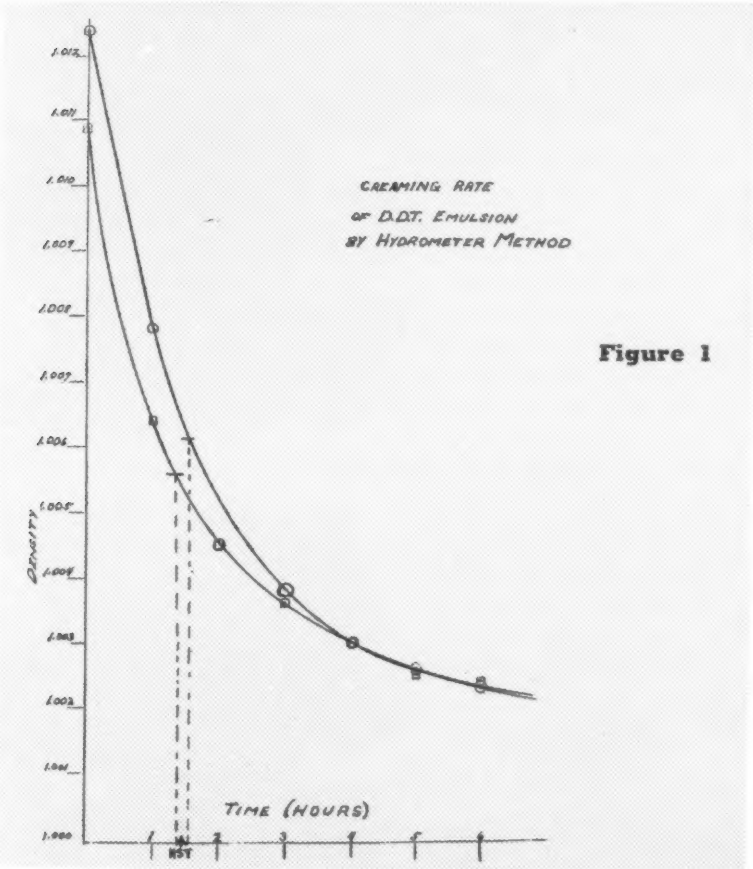

Figure 1

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should apply to lighter-than-water emulsions as well. Attempts were therefore made to confirm this by using xylene instead of Velsicol as the DDT solvent, and making the measurements with a Schaar No. H4630G hydrometer covering the range 0.945 - 1.000.

It was found that irregular and meaningless readings were obtained in such a system, however, and this was traced to the fact that the lighter-than-water cream rose to the top of the column and surrounded the upper part of the hydrometer bulb, thus falsifying the readings. An attempt was made to avoid this by constructing a special hydrometer with a very long stem portion below the surface of the emulsion, but while these readings were somewhat better, the layer of cream at the surface surrounded the stem and again caused spurious density readings.

It was, therefore, concluded that the hydrometer method is not practical for lighter - than - water emulsions.

It should be mentioned that a somewhat modified approach, using a hydrostatic balance of the type described by Forziati (3) would probably overcome this difficulty, and a few tests of this type were carried out by Dr. A. B. Steele of Carbide & Carbon Chemicals Co., New York, and Dr. R. B. Trusler of Davies-Young Soap Co., Dayton, O. Such a study might well serve as the subject of a separate report.

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2. R. G. Downes, *J. Council Sci. Ind. Research* 17 197-206 (1944).
3. A. F. Forziati, B. J. Mair, F. D. Rossini, *J. Res. Nat. Bur. Stand.* 35 513 (1945).

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New Non-Ionic Resin

Chemical Products Corp., West Paterson, N.J., recently introduced "Chem Resin G", a non-ionic resin. The product is water and solvent soluble and has good wetting properties. It is recommended for use in hair dressing, textile and paper processing.

New Rustproof Coating

A rustproofing, corrosion resistant mastic coating for the exterior of tanks, vats, ducts and structural work of chemical process plants is described in a bulletin issued recently by Palladium Mastic Corp. of America, Rutherford, N.J. Mastic type "T" is said to give protection against acid and alkali fumes, high humidity and salt air.

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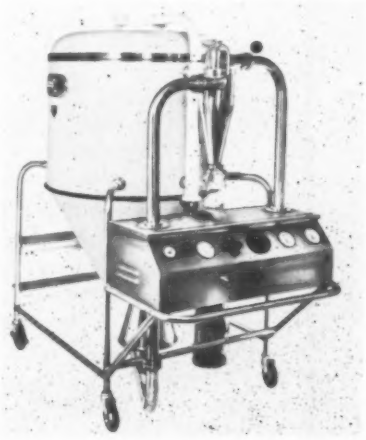
French Dictionary Revised

French English Dictionary for Chemists by Austin M. Patterson, John Wiley & Sons, Inc., New York, second edition, seven by five inches, 476 pages, price $6.50. The vocabulary in this pocket dictionary has been subjected to a thorough revision and expanded from 35,000 terms to an estimated number of 42,000. General information supplied in the introduction has also been brought up to date. The 1954 edition of this work should prove just as helpful and practical as its predecessor.

—— ★ ——

New Portable Spray Dryer

A new portable spray dryer for laboratory, pilot plant, and small scale production was introduced recently by Nerco-Niro Spray Dryer Division, Nichols Engineering & Research Corp., New York. Novel features include two built-in heaters, one electric and one direct-fired gas, a redesigned electrical system for simpler change-over from various voltage systems, and hydraulic drying chamber lid removal. Full details are available from the manufacturer.



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Offers New Drum Cleaners

Two portable drum cleaners are described in a four-page illustrated folder issued recently by Aceco Products, Inc., New York. These models feature a nozzle designed to perform both spraying and suction operations, the spray being reversible by means of a control valve. Model "X-148" features a built in storage container and is mounted on casters, while model "X-348" is mounted on the top of a standard 55 gallon steel drum which acts as storage container for the solvent. Both units are powered by a ¾ horse power explosion proof electric motor. The type solvent used depends upon the nature of the drum contents. Aceco will make recommendations and will, if necessary, develop a suitable solvent in its own laboratory, without cost to the customer. These cleaners enable one operator to clean twenty to twenty-five drums per hour according to the manufacturer. This would constitute a saving of at least $1.00 per drum.

—— ★ ——

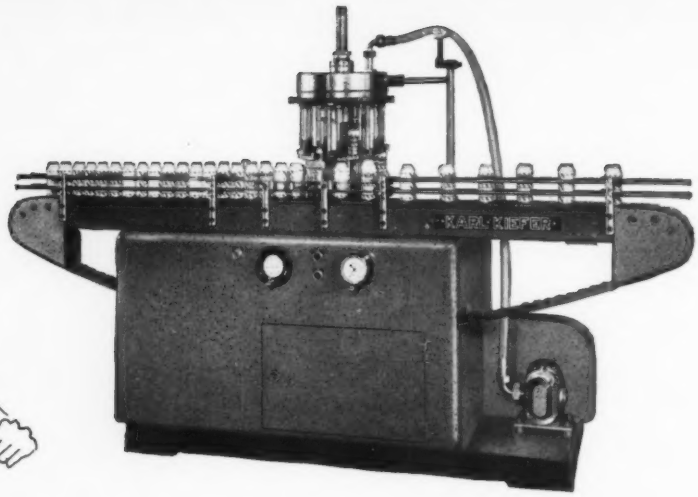
Cone Screw Cap Liner

A patented plastic screw cap with a polyethylene cone liner for glass, metal, or plastic containers was introduced recently by Poly-Seal Corp., New York. The "Poly-seal" closure is said to eliminate leakage, evaporation, contamination, binding, and back-off. It is available in a wide range of colors and designs and can be made to fit finishes from 15 mm up to large jar sizes.

—— ★ ——

Offers Penta in Lab Lots

Sodium pentachlorophenate is now available in laboratory lots from Fisher Scientific Co., Pittsburgh, Pa., and Fisher Scientific Ltd., Montreal, Que. Fisher offers the compound as a powder and also in the form of pellets, for uses where controlled solution rate is involved.



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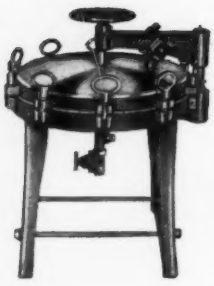

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MRM Miniature Filler

A new fully automatic miniature rotary liquid filling machine was introduced recently by MRM Co., Brooklyn, N.Y. The unit is adjustable to fill containers ranging in size from 1/8 ounce to 16 ounces, regardless of shape, and is suitable for vacuum, gravity or volumetric operation. Equipped with eight spouts, it is capable of speeds up to 150 containers per minute. The filler is five feet long, four inches tall, and three feet deep, features a removable stainless steel tank, and standard contact parts of stainless steel which can also be supplied in hard rubber, Lucite, or other materials as required.

—★—

Synthetic Org. Chemistry

Synthetic Organic Chemistry by Romeo B. Wagner and Harry D. Zook, John Wiley & Sons, New York, cloth, 9½ by 6 inches, 887 pages, price $11.50. This volume summarizes methods of organic syntheses most frequently employed in the preparation of mono- and di-functional compounds. The methods are collected in 39 chapters, each of which is devoted to the formation of compounds containing a particular functional group of related groups. Each chapter is supplemented by an extensive bibliography and by numerous tables.

—★—

Solvents Handbook

The Handbook of Solvents by Leopold Scheflan and Morris Jacobs, D. Van Nostrand Co., New York, cloth, 728 pages, 9½ by 6½ inches, price $10. The first section of this work, comprising 78 pages, treats various theoretical aspects and practical attributes of solvents such as solvent action, solvent power, evaporation and evaporation rates, and limits of inflammability. Solvent recovery is discussed in detail and annotated with numerous literature references. Safety practices in the use and handling of solvents are covered.

The second and major section tabulates the physical constants of more than 2700 liquid organic compounds, including commercial solvents and substances which may attain such status in the future. A cross index of synonyms adds to the usefulness of the tabulation. Various tables, including one of maximum allowable concentrations of solvents for an eight-hour working day, are featured, as well as a list of sources.

—★—

Book on Oils and Fats

Vegetable Fats and Oils by E. W. Eckey, E. W. Eckey Research Laboratory, Cincinnati, with a chapter by Lawrence P. Miller, Boyce Thompson Institute for Plant Research, Inc., ACS Monograph #123, Reinhold Publishing Corp., New York. Cloth, 9¼ inches by 6¼ inches, 836 pages, price $16.50.

This book succeeds ACS Monograph #58, now out of print, bearing the same title, written by George S. Jamieson. The principal feature of the earlier volume has been retained, namely the provision of a descriptive catalog of nearly all of the vegetable fats and oils concerning which much scientific information has been published. But the grouping into nondrying, semidrying and drying oils has been relinquished in favor of an arrangement according to the botanical classification of the plant from which the oil is derived, regardless of iodine value or melting point.

Information is included on the plant itself, the composition of the fat bearing part, and the characteristics of the fat itself. Numerous tables and figures offer convenient comparisons of closely related fats and oils. The descriptive catalog of individual fats and oils takes up approximately two thirds of the book. The first seven chapters contain information broadly applicable to fats and oils, including data on chemical composition, physical properties and reactions, biochemical and nutritional aspects, genesis in plants, and methods of analysis, examination, and investigation. Every chapter is followed by a list of literature references and an extensive general index is appended.

Gen. Dyestuff Booklet

General Dytstuff Corp. and Antara Chemicals, Sales Divisions of General Aniline & Film Corp., New York, have published an illustrated brochure describing their products and services. Of particular importance to the sanitary specialties field are Antara's many surfactants. These include among others "Alipals" liquid detergents, "Bionols" quaternary germicides, "Emulphors" nonionic emulsifiers; "Igepals" nonionic detergents and emulsifiers; "Igepons" anionic detergents, and "Sorapons" anionic detergents. The list of Antara's chemical specialties includes "Nullapons" sequestering or chelating agents, "Blancophors" optical whitening agents and "Chat" low foaming liquid anionic detergent. Recent additions to the specialties line are the "Uvinuls". These are described as ultraviolet light absorbers, suggested for many industrial uses. Among these are waxes, polishes, oils, aerosols, and other film-forming products where protection against ultraviolet radiation is desired.

Among the high pressure acetylene derivatives originating from General Aniline's Grasselli plant and finding expanding use in the specialties field is polyvinylpyrrolidone and a PVP-iodine combination.

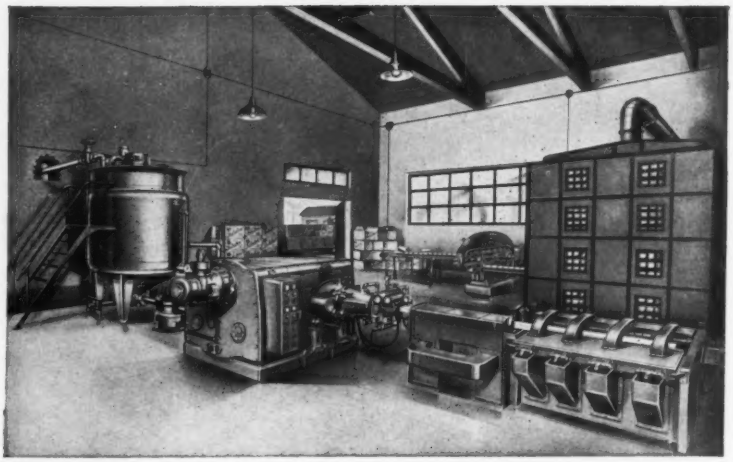
—★—

Bulletin on "Strobane"

"Strobane" pesticide for household spray and aerosol formulation is fully described in service bulletin GA-19a issued recently by B. F. Goodrich Chemical Co., Cleveland. Composed of terpene polychlorinates, the product is said to exhibit insecticidal performance, low toxicity, and ready solubility in aliphatic and aromatic hydrocarbons, xylene, vegetable oils, acetone, and alcohol (up to 12 to 14 percent). It has a piney pleasant odor and does not leave any visible crystalline residue on furniture or clothing. In addition to "Strobane's" properties, the bulletin lists a number of formulations for sprays and for aerosols.

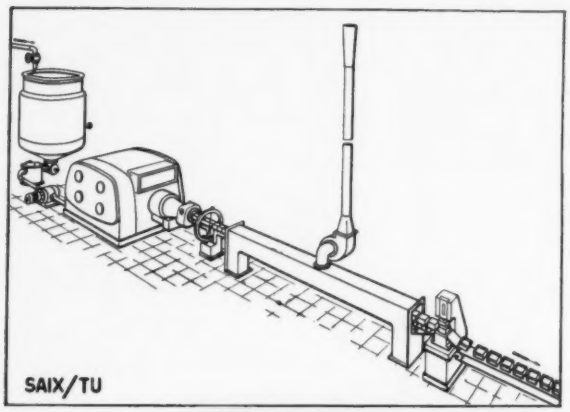
MECCANICHE MODERNE

CORSO SEMPIONE, 51 (Italy) BUSTO ARSIZIO



PATENTED Cooling Extruder Type SAIX for the continuous chilling and finishing of every kind of laundry soap, with 62%, 52% as well as with a T.F.M. content as low as 35%, either from full boiled kettle soap or from soap pads by a continuous process.

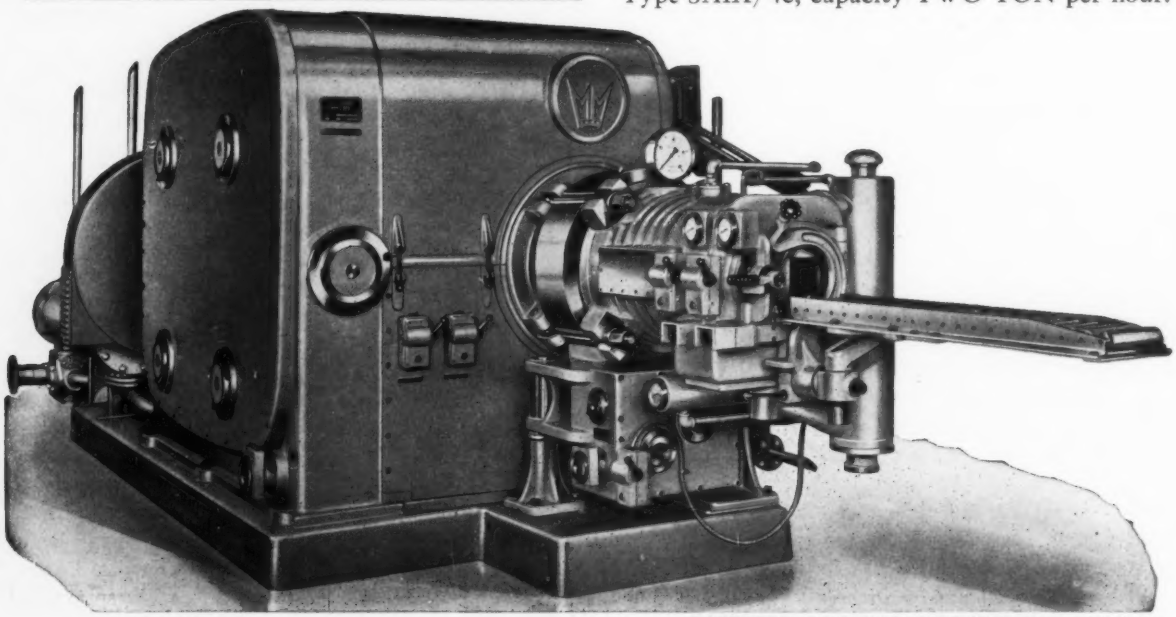
From the saponification (molten hot soap) to the finished bars (cold solid soap) in a single stage without any interruption or structural change. In this plant, completed by a preliminary evaporator of the molten hot soap, it is possible to manufacture 72-73% T.F.M., soaps with an opaque, translucent or transparent appearance. The soap is continuously formed in bars of every desired size or in pellets for further milling procedure.



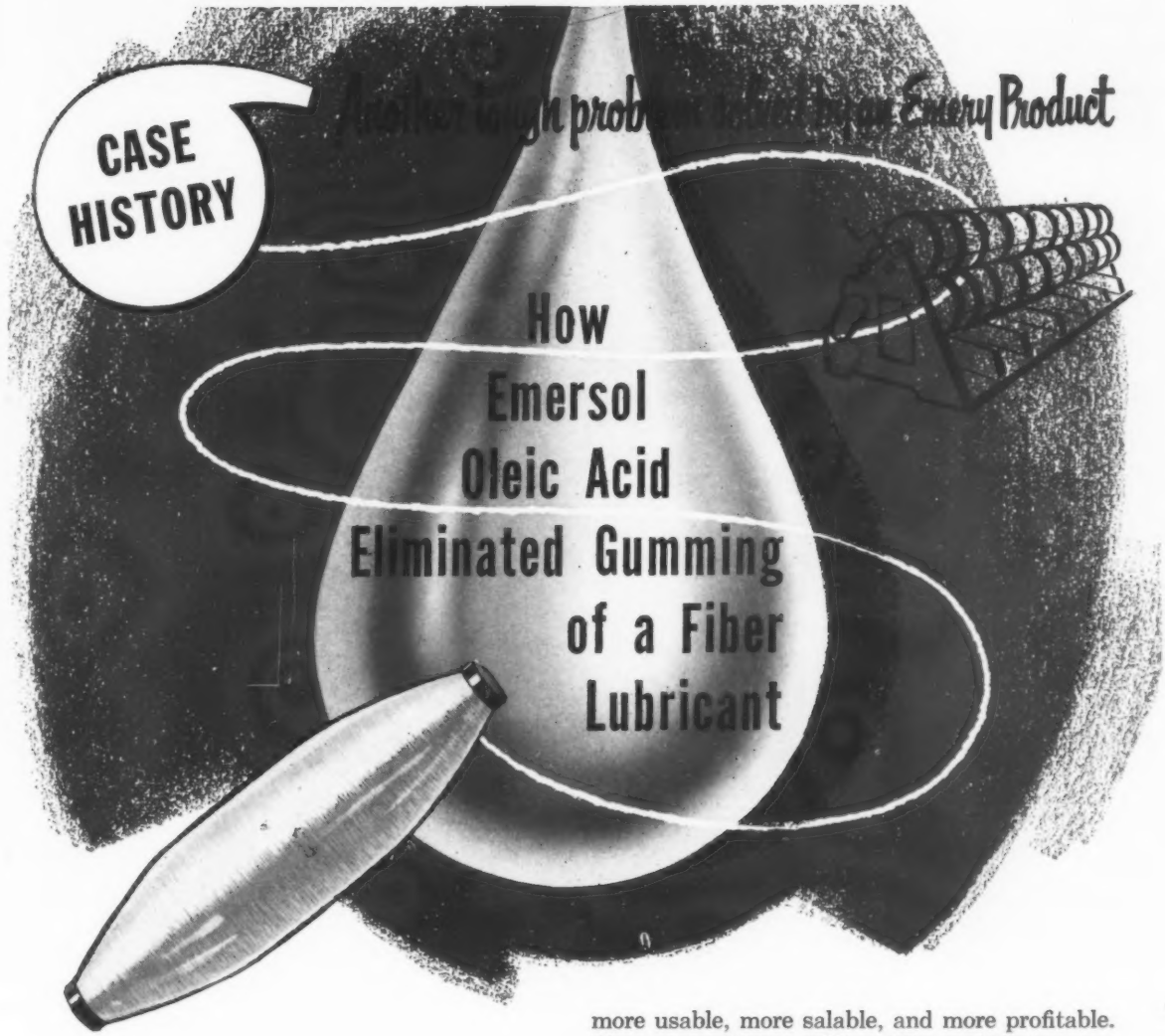
SAIX/TU

In this plant it also is possible to manufacture conventional or transparent toilet soaps without any formation of hard spots.

Type SAIX/1c, capacity HALF TON per hour.
Type SAIX/2c, capacity ONE TON per hour.
Type SAIX/4c, capacity TWO TON per hour.



PATENTED COOLING EXTRUDER Type SAIX/4c


CASE HISTORY
Another tough problem solved by an Emery Product
How Emersol Oleic Acid Eliminated Gumming of a Fiber Lubricant

Because of its excellent lubricating and emulsifying properties, oleic acid was chosen as a base for this manufacturer's fiber lubricant. Unfortunately, when applied to yarns, the oxidation promoted by the large surface area induced gumming, accompanied by processing difficulties and uneven dyeing. But... the problem was solved when *stable* Emersol 221 White Elaine was substituted for an ordinary double-distilled oleic acid. Gumming difficulties ceased immediately.

Even where gumming is not of primary importance, their ***color stability and resistance to rancidity*** are extra benefits that make any product more usable, more salable, and more profitable. The outstanding stability of Emersol Elaines can mean much to you. Since they cost no more than ordinary grades, it will always pay you to use Emersol Elaines—available in all grades to suit your specific need. Next time, everytime, buy Emersol Oleic Acids!

GET EMERSOL 233 WHEN YOU NEED THE *BEST!*

Emersol 233 LL Elaine (low-linoleic) is the purest oleic acid available commercially. Its extremely light color, outstanding color stability, superior resistance to rancidity, and low content of poly-unsaturated acids will make your quality products even better. For the ***best in oleic acids,*** buy Emersol 233 LL Elaine!

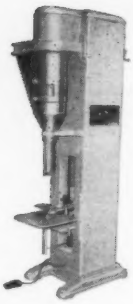
Emery

Fatty Acids & Derivatives
Plastolein Plasticizers
Twitchell Oils, Emulsifiers

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio

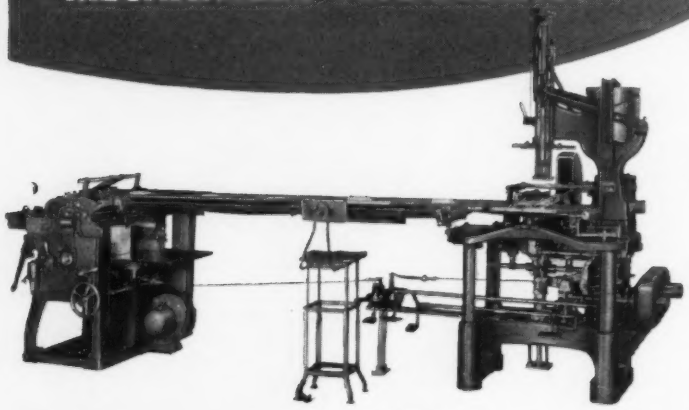
See us
at National Plastics Exposition
Cleveland — June 7-10

Improved Dexterity in MECHANIZED PACKAGING...



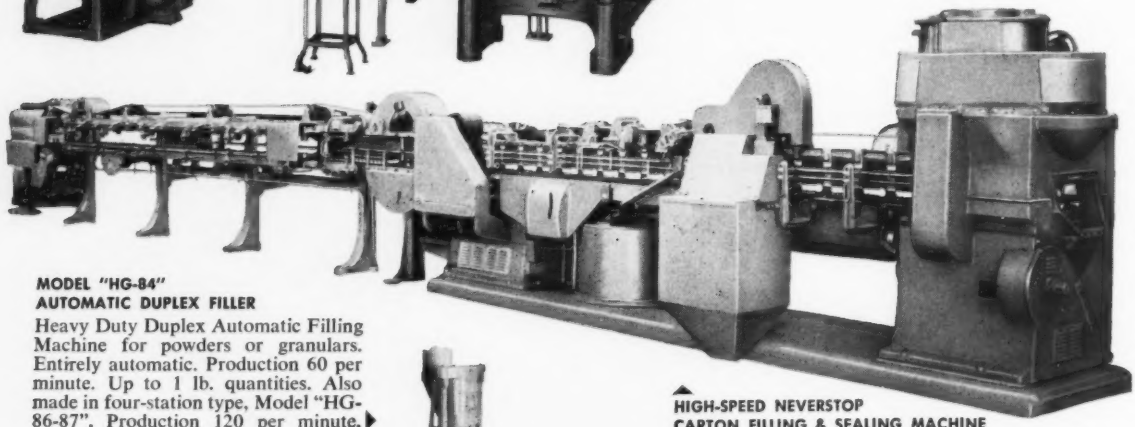
MODEL "EG" UNIVERSAL FILLER

Newest design. Fully streamlined. Fills by gross weight or by packing or by measurement. Handles powders, granulars or pastes. Various types of containers. ¼ oz. up to 5 lbs. or more. Production 15 to 30 per minute.



STOKESFEED PAPER BOX MACHINE

A complete paper box gluing, feeding and wrapping unit. Made in two sizes—Model "B" and Model "H". Completes up to 40 boxes per minute. Only one operator required. MODEL "B"—maximum: 20" x 15" x 4"; minimum: 6" x 4" x ½". Model "H"—maximum: 15" x 10" x 2¾"; minimum: 4" x 1¾" x ½".

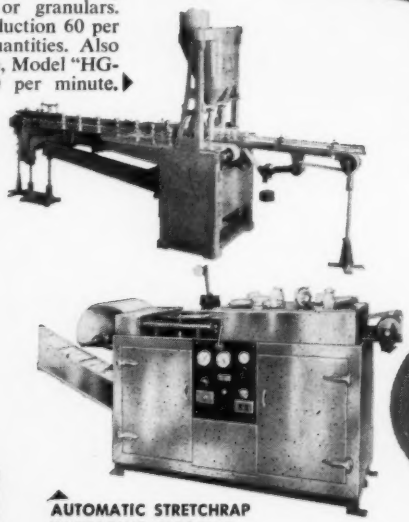


MODEL "HG-84" AUTOMATIC DUPLEX FILLER

Heavy Duty Duplex Automatic Filling Machine for powders or granulars. Entirely automatic. Production 60 per minute. Up to 1 lb. quantities. Also made in four-station type, Model "HG-86-87". Production 120 per minute.

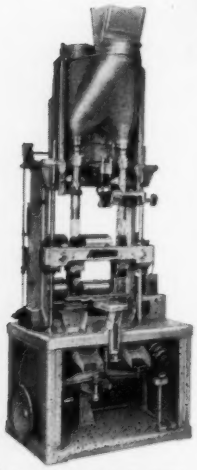
HIGH-SPEED NEVERSTOP CARTON FILLING & SEALING MACHINE

For free-flowing products. Feeds, fills and seals cartons, both top and bottom, in one continuous operation. Cartons 5 15/16" x 3 7/16" x 1 3/16" to 8½" x 6" x 2⅛". 60 to 200 or more per minute. One operator.



AUTOMATIC STRETCHRAP PACKAGING MACHINE

For wrapping odd shapes of articles or pieces, smoked meats, sausage, toys, etc. with heat sealing "Pliofilm". One operator required. Production 12 to 15 per minute.



STOKESWRAP AUTOMATIC PACKAGING MACHINE

Equipped with auger feed. Forms, fills and heat-seals the package, taking printed or unprinted web from roll stock. Volume to 56 cubic inches or 1 lb. 50 to 120 packages per minute.

...ENGINEERED BY STOKES & SMITH CO.

STOKES & SMITH CO.

4915 SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

Pacific Coast: SIMPLEX PACKAGING MACHINERY, INC., 534 - 23rd AVE., OAKLAND 6, CALIF.

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SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

TRADE MARK

PRODUCTION Clinic

By E. G. Thomssen, Ph.D.

DISSATISFACTION, personal dislikes, indolence, and insolence on the part of an individual, employee or a group are the usual components of labor trouble likely to interfere with production. In a large plant these problems are the concern of a specially trained labor relations manager. But in a smaller factory they are part of the production man's burden or that of his foreman. A recent conversation with a psychologist, experienced in the field of labor relations, shed some light on the origin and prevention of these undesirable symptoms.

Dissatisfaction with a job does not usually stem from the job itself, we were told. Neurosis, domestic trouble, diet, fear, desire for attention, and the feeling of incompetence may, combined or individually, be the roots of the evil. A friendly heart-to-heart talk with the dissatisfied employee may lead to a diagnosis of the condition and help towards a cure, provided that the talk follows the danger signals promptly. A dissatisfied employee will pick on the inevitable imperfections of working conditions anywhere. He will find followers and soon a cynical group will spread discontent, which may grow into serious disturbances and, eventually, strikes.

If the original troublemaker is an older employee the case is more complicated. He may see younger men advancing while he stands still and may be driven by fear of being replaced or of being "put on the shelf". His seniority will lend weight to his voice. A well informed superior could allay such fears of being by-passed or replaced because of age by citing some recent findings published by Iowa State University. These indicate that man's intelligence and aptitude do not decline with age. Studies over a period of thirty years show that man's capabilities improve with age,

DR. THOMSSEN

that mental speed declines slightly, but mental power rarely. Management should revise the erroneous idea that men over fifty years of age are on the decline mentally. Such reasoning could well help to reassure and thus conciliate an older fault finder.

Personal dislikes among employees engender a "get-even" spirit, which can result in more harm to the employer than to the persons involved in the dispute. Repeated close personal contact among the same persons, possibly having different temperaments, over an extended period are the usual causes of personality clashes. Such friction in the home can cause hostility which frequently leads married couples into divorce courts. Transferring personnel to different groups or departments at regular intervals may help reduce personality clashes caused by intimate steady working together of the same group of people.

Illness or dislike of a job are common causes of indolence. When a man is habitually lazy and inattentive, a medical check-up may be indicated. If this does not uncover any reason for the man's behavior, a conference with the man to discover his likes and dislikes, as well as his attitude toward his work, may reveal the cause for his lack of progress on the job. Sometimes a different type of work may transform what appears to be a shiftless, unhappy individual into a valuable employee. Everyone has certain preferences even when it comes to jobs.

Insolence often springs from poor adjustment which may be manifested in a need for self assertion and excessive readiness to take offense. Sometimes it springs from a trifling imaginary slight: the boss may have failed to praise a task particularly well performed, neglected to smile when it was expected or forgot to congratulate an employee on some outside achievement. A kindly word, well timed, or a joke, judiciously applied, go far towards mending such petty troubles.

Psychology is not a usual part of the production man's stock-in-trade. But some extracurricular reading in psychology slanted for labor relations may prove a valuable asset in the management of the operatives under his jurisdiction.

New Automatic Bagger

A NEW automatic bagging machine capable of filling and weighing up to twenty 100-pound bags per minute of free flowing powdered material was introduced recently by Union Bag Co., New York. The "I & C" bagger handles open mouth paper or textile bags of from 10 to 200 pounds weight. The change-over in weights is said to be accomplished quickly. Economy in labor, floor space and purchase price are claimed for this unit.

Hydrophilic Colloids

"ALGIN at Work", a brochure carrying information on the use of algin and alginates in polishes, emulsions, and other chemical specialties, was published recently by Kelco Co., New York. Copies

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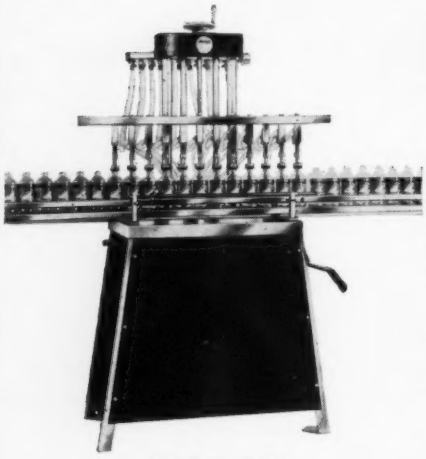
PACKER

STOPS A FOAM PROBLEM AT THE LYK-NU COMPANY
ANOTHER EXAMPLE OF PACKER INGENUITY!



MODEL PGF

PROBLEM TO FILL FOAMY WHITEWALL TIRE CLEANER, efficiently and quickly, without Foam . . . also handle other non-foaming materials.

SOLUTION A PACKER GRAVITY FILLER, with Automatic Overflow . . . and Foam Control built into machine, having specially designed spout assemblies.

RESULT EFFICIENT FILLING, without Foaming. INCREASED PRODUCTION. . . . A versatile and fully adjustable filler from Fractional Ounces up to Gallons.

PACKER MACHINERY CORP.
30 IRVING PLACE NEW YORK 3, N. Y. DEPT. E-12

are available by writing the company at 31 Nassau St., New York 5, N. Y.

Offers "Packaged" Plants

"PACKAGED" plants are now being offered by Williams Patent Crusher and Pulverizer Co., St. Louis, Mo., makers of hammer mills, roller mills, air separators, and vibrating screens. The firm's testing and research facilities are available for custom work.

Durable Valves

"NI-RESIST" valves, made of an alloy more resistant to corrosion and heat than cast iron, are being offered by William Powell Co., Cincinnati. These valves are suitable for use in plants handling caustic soda and potash.

New Iron Sequestrant

"PERMA-Kleer," made by Refined Products Co., Lyndhurst, N.J., sequesters traces of iron, calcium, and other metal salts in aqueous processes. The product is said to be stable, versatile, and economical. A booklet is available on request.

Electric Heaters Book

A HANDBOOK on how to use "Chromolax" electric heaters was issued recently by Edwin L. Wiegand Co., Pittsburg, Pa. This should be of interest to anyone concerned with the heating of industrial liquids.

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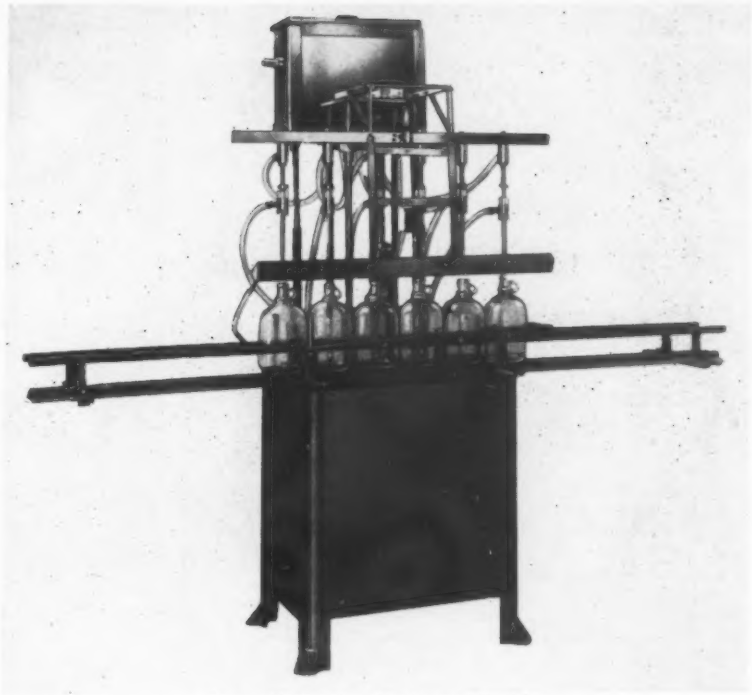
New Foamy Liquids Filler

A new filling machine specially designed for use with foamy or other very sensitive liquids was announced recently by MRM Co., Brooklyn, N.Y. The foam-excluding feature consists of a spring valve released by the filling spout touching the bottom of the container, thus permitting the container to be filled from the bottom upwards. When the fill is completed the spout withdraws automatically and all liquid adhering to the sides of the tube is trapped in a drip pan which automatically places itself under the filling stem. The standard unit, equipped with six filling spouts, fills five to seven five-gallon containers, eight to twelve one-gallon containers, up to 18 half gallons, or 24 quarts per minute, and other sizes at proportionate speeds. The six spout model comes with a manual or fully automatic conveyor feed arrangement. A semi-automatic machine can be supplied with a larger number of spouts and a fully automatic rotary unit can be built for greater production needs.



New MRM filler for foamy liquids

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Data on "Perma Kleers"

The availability of reports of an independent research laboratory giving the results of tests it performed on "Perma Kleer 80" sequestering agent of Refined Products Corp., Lyndhurst, N. J., were announced recently. Covered in the reports are the results of a primary skin irritation test, and also tests for eye irritation using the Draize procedure with rabbits.

The "Perma Kleer" brands of organic sequestering agents manufactured by Refined Products are stable salts of polyamine carboxylic acid. They are available as aqueous solutions and spray dried beads. They combine with most metal ions to form water soluble chelates.

"Perma Kleer 80" is claimed not to be precipitated by common acids and not subject to hydrolysis or decomposition in either acid or alkaline media. Ferric ions are said to be sequestered over the entire pH range with only a moderate loss of efficiency at pH 7 to 11. Calcium is effectively chelated even below a pH of 7. The solubility of "Perma Kleer 80" is said to be uniform at 160 milligrams per hundred grams of water for the whole pH range of 0 to 12.

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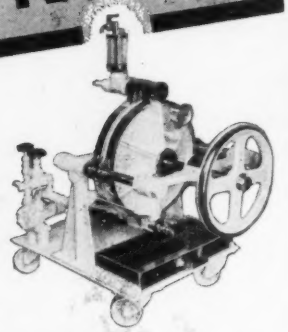
New Perry Opacifier

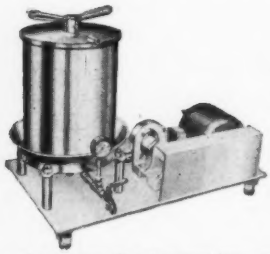
A new non-resinous emulsifier said to have high resistance to acid and alkali hydrolysis and to oxidation, is offered by Perry Brothers, Inc., Brooklyn, N. Y. Emulsifier "X-180," a nonionic, is claimed to be non-toxic, non-irritating and stable at a wide range of temperatures.

. . . . Step Up your production with ERTEL ASBESTOS DISK FILTERS!

1. EBW MODEL PORTABLE FILTER



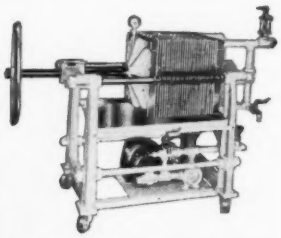
A highly efficient, readily portable filter that meets requirements for smaller capacities. Performance-proven over the years in many hundreds of plants throughout the world. Perhaps Ertel EBW model can economically sped up your production. Ask for full particulars — an EBW is in operation in your vicinity, right now!



2. ECD MODEL ENCLOSED DISK FILTER

Typical of Ertel craftsmanship is this Positive Seal Multi-Purpose Disk Filter. The outstanding feature of independent filtering elements provides positive seal of any type filtering medium. Cylinder prevents loss of liquid — particularly well adapted for volatile liquids as well as many other ordinary filtering requirements.

3. EU MODEL UTILITY FILTER



The Ertel Filter that's designed to use asbestos filter sheets, filter cloth, filter paper or filter cloth and filter aid. Standard units in bronze, nickel plated, stainless steel or hard rubber circulatory system. Comparison and operation records prove the EU Model unmatched in design, versatility and operation-life. Experience has shown that the great majority of filtration problems can be solved by your consultation with our engineers. May we help you?

ASK FOR ILLUSTRATED CATALOG

Describes the complete line of precision built Ertel Liquid Handling Equipment for Industry.

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FATTY ACIDS		METHYL ESTERS	
CAPRYLIC	COCONUT	CAPROATE	COCONATE
LAURIC	CAPRIC	CAPRATE	CAPRYLATE
ELDHYCO	MYRISTIC	MYRISTATE	LAURATE
PALMITIC		ELDO 18	PALMITATE

For samples and specifications, write Dept. S

Rely on

OIL WORKS

MAIN OFFICE: P.O. Box 599, Oakland 4, Calif.

PLANTS: Bayonne, N. J., Oakland, Calif.

Rheem Offers Fiber Drums

A new line of fiber and fiber-metal drums was introduced last month by Rheem Manufacturing Co., Los Angeles. The four types of fiber containers now made by Rheem were shown at the National Packaging Exposition in Atlantic City, N. J., last month. The all-fiber containers are made in sizes of from one to 32 gallons, and the fiber-metal drums come in capacities ranging from five to 60 gallons. Diameters range from eight to 23 inches, and lengths from seven to 42 inches. Shippers and marketers wishing to maintain product or trade name identity can obtain the fiber drums with full-color lithographed labeling or silk screening to match their advertising, other forms of packaging, etc. For special protection against moisture the containers can be coated with plastic or other moisture resistant linings, or can be used as outer containers for polyethylene bags. Recessed tops and bottoms provide protection against storage dampness and a convenient gripping surface.

Various types of closures are available: a simple flush-fitting insert top for the all-fiber container and slip or friction tops for fiber-metal containers which are flush with the diameter of the drum for easy side by side stacking. Fiber-metal drums, using a laminated fiber shell with steel heads and bottoms for added strength, come with three different types of closures: a simple cover, friction cover, and the "Rheem Lox" ring which provides positive locking for protection of contents.

—★—

"Ionol" Passed by FDA

A CP grade of "Ionol" antioxidant is now available for use in edible fats and shortenings and for stabilization of rubber and plastic composition parts of food handling equipment, it was announced recently by Shell Chemical Corp., New York. "Ionol" is Shell's name for 26-di-tert - butyl-4 methylphenol, which has now been passed by the Food and Drug Administration for incorporation in all food and drug products under its jurisdiction.

—★—

Names Midwest Agents

Packer Machinery Corp., New York, recently announced appointment of two agents in the midwest; Palmer Supplies Co., Cleveland and Cincinnati, O., in the Ohio area and Ace Processing Equipment Co., Chicago, in the Chicago area.

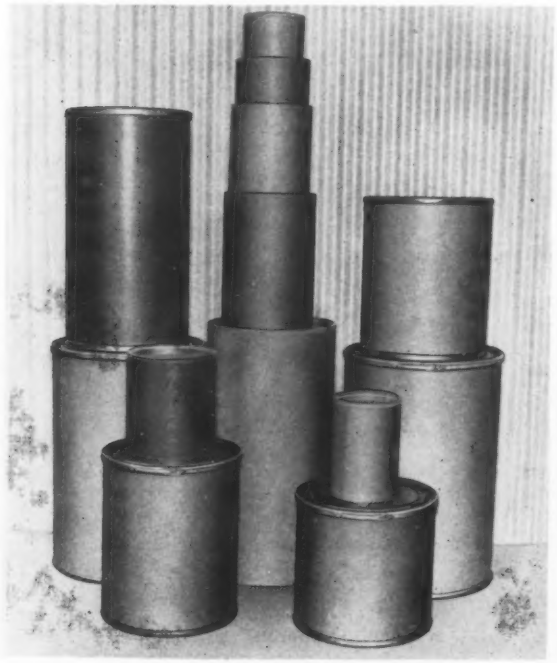
Gross Expands Its Line

A new line of hydrogenated fatty acids and glycerides has been introduced recently by A. Gross & Co., Newark, N. J. This includes hydrogenated tallow fatty acids "Groco 57" and "Groco 58", hydrogenated tallow glyceride "Grocol 600", hydrogenated coconut oil glyceride "Grocol 260-H", and hydrogenated lard and rubber grade stearic acid. Initial light color, resistance to discoloration under heat, uniformity of composition, and low iodine values are claimed for these products.

—★—

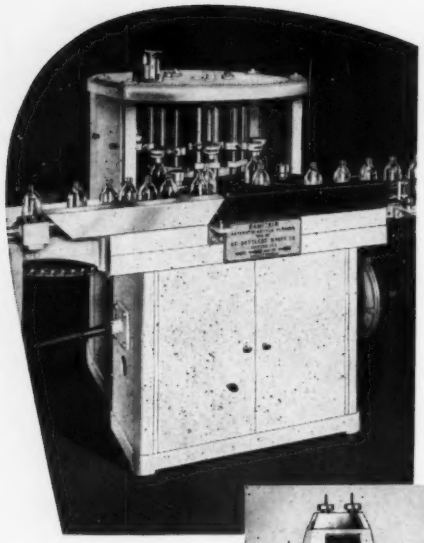
New Sharples Surfactant

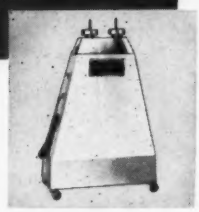
A new non-ionic wetting agent, detergent and emulsifier, designated "Nonic 300", was introduced recently by Sharples Chemicals Inc., Division of Pennsylvania Salt Manufacturing Co., Philadelphia. A polyethylene glycol alkylphenyl ether, the product is claimed to have good stability to acids, alkalies, and oxidizing agents and to be effective over a wide range of water hardness, pH, and temperature. "Nonic 300" is soluble in water, many chlorinated compounds, alcohols, ketones, esters, and aromatic hydrocarbons, and is compatible with soap and synthetic anionic and cationic surface active agents. As a detergent it may be used alone or compounded in household detergents, acid metal cleaners, detergent-sanitizers, heavy-duty industrial cleaners, and other industrial applications. In pesticidal sprays and other specialties it is suggested as an emulsifier.



New fiber and fiber-metal drums and containers announced recently by Rheem Manufacturing Co., Los Angeles.

At right is the new "Rheem Lox" ring closure for drums.





Semi-Automatic Air Cleaner

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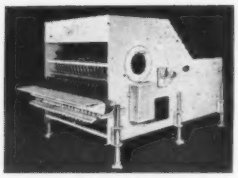

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NEW Patents

The information below is furnished by patent law offices of

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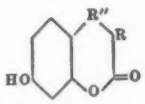
The data listed below is only a brief review of recently issued pertinent patents obtained by various U. S. Patent Office registered attorneys for manufacturers and/or inventors. Complete copies may be obtained direct from Lancaster, Allwine & Rommel by sending 50c for each copy desired. $1.00 for Canada. They will be pleased to give you free preliminary patent advice.

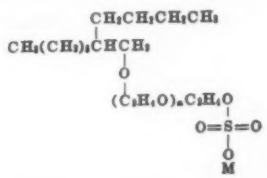
No. 2,673,186. Alkaline Detergent Composition, patented by Charles E. Wheelock, Cincinnati, Ohio, and William B. Reynolds, Bartlesville, Okla., assignors to The Procter and Gamble Company, Ivorydale, O., a corporation of Ohio. The patent discloses a solid form detergent composition of alkaline nature having an enhanced whiteness in sun light. The composition comprises essentially an alkaline detergent selected from the group consisting of (a) water soluble alkali metal salts of higher fatty acids, and (b) non-soap anionic synthetic organic detergents; and, in a proportion of from about 0.0005% by weight to about 0.25% by weight coumarin derivative having the structural formula:



in which R is a radical of the group consisting of alkyl and aralkyl, said radical having a saturated carbon atom adjacent to the coumarin ring and containing no more than 15 carbon atoms, and R'' is a member of the group consisting of hydrogen and alkyl of not more than six carbon atoms.

No. 2,673,841. Cleaning Preparation and Method of Preparing the Same, patented by George C. Reinhard, Wood-Ridge, N. J. A cleaning composition is described which is a bulk product, made up of irregular shaped units. These units are capable of ready, independent movement without clinging together, which permits pouring a quantity from a larger bulk, said units upon introduction into water readily floating and capable of maintaining their independent identity without tendency to lump, disintegrating upon contact with water and dissolving, said units comprising sodium tetraborate in heat swollen form, light and exceedingly porous, of low bulk density, rehydrated with a water solution of a soap, and having a pH greater than 7.

No. 2,673,842. Detergent Compositions, patented by Earl L. Brown, Dayton, Ohio, assignor to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware. The patent covers a surface-active composition consisting of from 10 per cent to 90 per cent, based on the total weight of the composition, of a taurine derivative having the general formula $RNH\text{-}CH_2CH_2SO_3M$ in which R is an alkyl radical of 12 carbon atoms and M is selected from the class consisting of alkali metal and ammonium; and from 90% to 10%, based on the total weight of the composition of a polyglycol derivative having the general formula.



in which n is an integer having a value of from 2 to 4 and M is selected from the class consisting of alkali metal and ammonium.

No. 2,672,349. Composition for Cleaning Metal, patented by Foster D. Snell, New York, N. Y., and William H. Stahl, Philadelphia, Pa., assignors to Foster D. Snell, Inc., New York, N. Y., a corporation of New York. A composition in the form of a thixotropic gel for cleaning metal is covered. This consists essentially of bentonite in amount within the range of about 2.5%, by weight, to about 8.0%, by weight, of the composition; water within the range of about 21%, by weight, to about 92.5%, by weight, of the composition; an acid having an ionization constant within the range of about 1×10^{-5} to about 1×10^{-2} in amount on an anhydrous basis within the range of about 5%, by weight, of the composition to the limit of its solubility in the said water, but not in excess of about 70%, by weight, of the said composition; and a water-soluble synthetic organic surface-active agent selected from the group consisting of non-ionic and cationic surface active agents and characterized by an essentially linear structure one end of which is hydrophobic and the other end of which is hydrophilic in character, which is not reactive with the said acid in aqueous solution, which retains its surface activity in the presence of the said acid, and which has the characteristic of synergistically increasing the apparent viscosity of a mixture of bentonite and water, in amount within the range of about 2.5% to about 8.0%, by weight, of the bentonite present in the composition.

No. 2,673,172. Fungicidal 1,2,3,4,7,7-Hexachloro-5-(Aminophenyl) - Bicyclo - [2.2.1]-2-Heptene, patented by Percy B. Poler, Morton Kleiman, and Henry G. Fechter, Chicago, Ill., assignors to Arvey Corporation, a corporation of Illinois. The patent covers 1,2,3,4,7,7 - hexachloro - 5 - (aminophenyl) - bicyclo-[2.2.1.]-2-heptene. It also describes a method of controlling fungus growths which comprises applying to fungi and their places of growth 1,2,3,4,7,7-hexachloro - 5 - (aminophenyl) -bicyclo-[2.2.1.]- 2 - heptene.

No. 2,673,173. Preparation of 1,1,3-Trichloro - 2,3,3,-Trifluoropropene and Method of fumigating therewith, patented by Robert P. Ruh, Midland, Mich., assignor to the Dow Chemical Company, Midland, Mich., a corporation of Delaware. The patent covers a method of producing 1,1,3-trichloro-2,3,3-trifluoropropene. This comprises gradually adding an alkali consisting of aqueous sodium hydroxide to a body of refluxing 1,1,2,3-tetrachloro-2,3,3-trifluoropropene until there is added a proportion from 10 to 50 per cent in excess of that stoichiometrically required for dehydrochlorination, heating the resulting mixture under reflux until reaction is complete and fractionating 1,1,3-trichloro-2,3,3-trifluoropropene from the reacted mixture.

A method of fumigating beetles and beetle larvae is part of this patent which comprises treating them with 1,1,3-trichloro - 2,3,3 - trifluoropropene vaporized in lethal concentration into the atmosphere in contact with them.

No. 2,671,043. Insecticidal Compositions containing Dodecachlorotetrahydro-4,7- Methanoindene and Method for Combating Noxious Organisms Therewith, patented by Everett E. Gilbert, Flushing, N. Y., assignor to Allied Chemical & Dye Corporation, New York, N. Y., a corporation of New York. A new insecticidal composition comprises dodecachlorotetrahydro-4,7-methanoindene and an inert insecticidal adjuvant as carrier for the insecticide.

No. 2,672,486. Production of Insecticidal Composition of Matter, patented by Morton Kleiman and Arthur Goldman, Chicago, Ill., assignors to Arvey Corporation, a corporation of Illinois. The method which comprises reacting 4,5,6,7,8,8-hexachloro-3a,4,7,7a-tetrahydro - 4,7-methanoindene in the presence of water with selenium dioxide and acetic acid, said acid being present in an amount adequate

(*Turn to Page* 122)

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Products and PROCESSES

Bleaching Detergent

A product combining bleaching and detergent action is made by mixing equal parts of NaClO (18 percent Cl) and Na_2CO_3 and by drying the mixture and reducing it to a fine powder. Italian patent 469,458, 1952, Memore Montacchini.

—★—

New Vegetable Detergent

A new paste detergent for use as flotation agent for pea cleaning was introduced recently to the food processing industry by Ken Equipment Co., Milton-Freewater, Ore. The product was developed by American Alcolac Corp., Baltimore, for use in the Key flotation cleaner, a machine which removes foreign matter from peas, corn, lima beans, and other vegetables. It is trade-named "Sipon LS Special".

—★—

Sorbitol in Shave Cream

A brushless shaving cream formulation incorporating sorbitol, claimed to have good spreading and wetting properties, is described in a recent issue of *chemmunique*, published by Atlas Powder Co., Wilmington, Del. "Hystrene" T-70 fatty acid, 18 percent; mineral oil 65/75, five percent; and "Tween" 60 emulsifier, five percent, constitute mixture A, which is heated to 90°C. "Sorbo" sorbitol solution, five percent; borax, 2 percent; triethanolamine, one percent; and water, 64 percent constitute mixture B, which is heated to 95°C. B is added to A with stirring. After the cream has reached setting point, mechanical agitation is discontinued. The preparation is occasionally stirred by hand until it reaches room temperature. Perfume and preserving agent are added as desired. Atlas warns that tests should precede utilization of this formula for commercial production.

In the same issue of *chemmunique* Atlas describes a blend of nonionic and anionic emulsifier trade named "Atlox" 3335 designed for use in insecticide formulations with both soft or hard water. Atlas recommends this product as an emulsifier for general purpose formulas of toxaphene, DDT, BHC, lindane, dieldrin, heptachlor, parathion, and several other toxicants, and for a six pound/gallon toxaphene-kerosene formula. "Atlox" 3335 has a low flash point (106°F) which excludes it from some military specifications.

—★—

Syndets from Sulfite Waste

Sulfite waste liquor is condensed with alkyl, alkylaryl, aryl, aralkyl, or acyl (particularly SO_3H-containing) organic compounds, preferably in form of their reactive halo derivatives. Condensation products may be brightened by treatment with bleaching agents. In an example 80 kilos of alkylsulfonyl chloride is heated with 200 kilos of sulfite waste liquor (sodium lignin sulfonate content 50 percent) at 50 to 60° in the presence of alkyl metal hydroxides. The reaction mixture is diluted with water, and the unsaponifiable constituents are removed. The residue is a slightly viscous liquid which may be treated stepwise with two to three percent H_2O_2 while heating to give a yellow brown product. German patent 896,645, A. Holtmann & Co., through *Chem. Abstracts*, vol. 48, p. 4234.

—★—

Chlorophyll a Catalyst

Chlorophyll's primary function in air deodorant applications is probably that of a catalyst or activator according to R. W. Moncrieff who spoke at the chlorophyll symposium of the American Chemical Society's annual meeting in Kansas City, March 26.

"Chlorophyll can act as a deodorizer in its own right, but probably only under special conditions involving intimate contact" said Mr. Moncrieff. "Chlorophyll is used as a catalyst in the vulcanization of rubber; it is used by nature as a catalyst on a collosal scale in the synthesis of cellulose; apparently, too, it can exercise an important role as a catalyst in the deodorization of air". Mr. Moncrieff described laboratory tests supporting these conclusions.

—★—

Floor Wax Allergy

Allergies caused by gaseous allergens given off by floor cleaners and polishes are not uncommon. The toxicants present in these products are usually turpentine or turpentine substitute (white mineral spirits). Recently, a product for the care of rubber floors has been placed on the market which is free of turpentine. It is a purely aqueous wax emulsion, free of all solvents. Practical tests in a dermatological ward showed this floor polish to be nonsensitizing and non-allergenic. Muenchner Medizinische Wochen-Schrift, 95,555 (1953).

—★—

Sulfonate Detergents

Thirteen alkyl benzene sulfonates having different alkyl groups were synthesized and their sodium salts evaluated as detergents. Correlations are shown between solubility, surface tension, and the structure of the alkyl groups. The effect of additives is discussed briefly. Masaya Ogawa, *Technol. Reports Osaka University*, 3, 183-9(1953), through *Chem. Abstracts*, vol. 48, p. 4232.

—★—

Lueders Fete Veteran

Martin Richards completed 25 years of service with George Lueders & Co., New York, on April 14, thus becoming the 56th member of the firm's veterans' organization. Mr. Richards is employed as foreman of the distilling department. At a luncheon held in his honor at the Drug & Chemical Club he received a membership pin in the veterans' organization, a gold watch, and gifts from the company's officers and his fellow employees.

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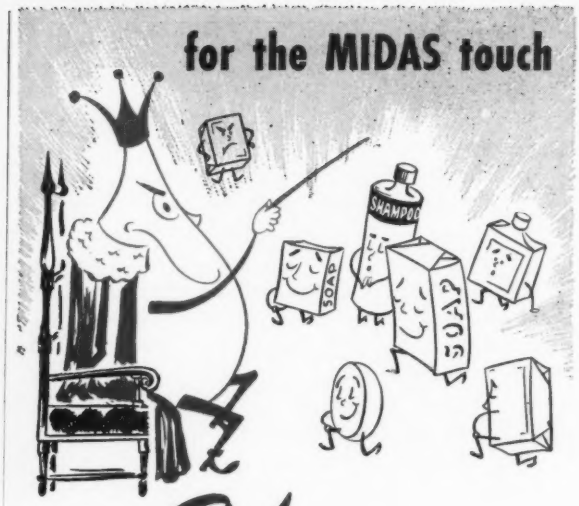

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SOAP PLANT Observer

By John W. McCutcheon

THE human relationship between employer and employee is one of the most important factors in the success of a company. Frequently friction develops between the two which, though not too well understood, can cause serious difficulties.

Companies, like people, can have "personalities," which are reflected in their relations with their customers, competitors and suppliers. Soap and detergent companies are no exception. A company may be thought of as extremely efficient and well organized, research minded, excellent in merchandising, uncommunicative, acquisitive, or the opposite of these things. A company's "personality" may be determined in the mind of outsiders by any one or a combination of these attributes and in varying degrees. Larger companies generally do not reflect the personality of any one individual, although there are exceptions to this. In the better managed companies of today, particularly those which stress the importance of the "team," the individual working for such a company adopts the thinking, mannerisms and "personality" of the company. Successful companies encourage this adoptive attitude, particularly for those men contacting other companies, and as a means of improving esprit de corps within the organization. However, strong conflicting personality differences, if allowed to go unchecked, can upset the smooth working balance of a company regardless of its size.

A company which is lacking in consideration for the welfare of its employees and fails to provide them with good working conditions, either mental or physical, cannot keep its employees happy. In the weeding out process, the type of employee who remains in spite of the unpleasant working conditions is generally the lackadaisical sort,

who in addition to having a weakness for practical jokes, is probably a bit careless with his formulas. The foreman who supervises such men is either their type or he or they don't last on the job. Poor morale or lack of discipline quickly reveals itself in a company, and sometimes in unexpected places. Recently, in a conference with a company of this sort, the purchasing agent sat with his feet on his desk and joked with his secretary.

At the opposite end of the pole, from the standpoint of efficiency and good operation, was a conference held with another company. Here employees treated each other with cordial restraint, offices were immaculately clean and the atmosphere was conducive to making decisions under planned conditions. Just prior to the conference a written memorandum was circulated to all concerned listing the subject matter to be discussed and showing the names of all those who were to attend.

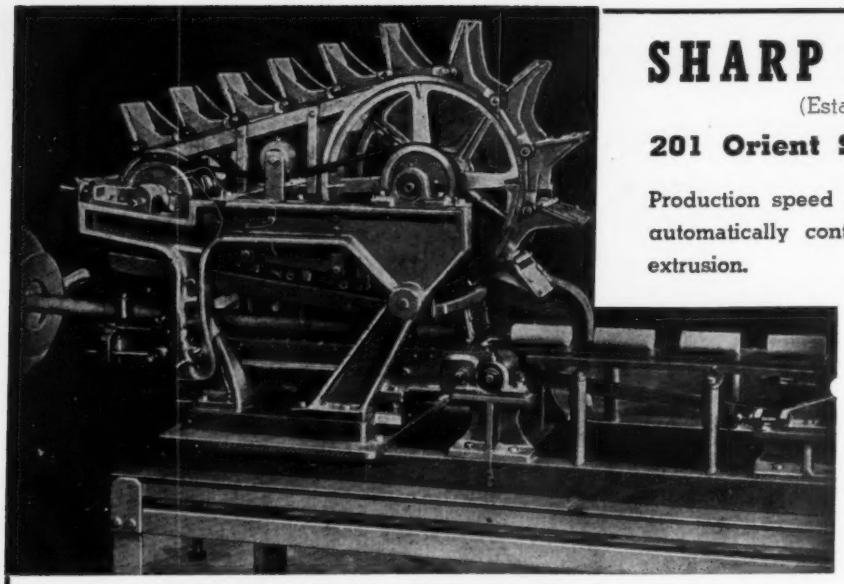
Besides mental climate, which is reflected in terms of morale or esprit de corps, and the physical working conditions, of which good lighting, proper equipment and cleanliness are attributes, there is another factor in the operation of a business that can influence relationships between people. Just as there are contrasts in physical and mental conditions at a plant, so, too, there are differences and problems based on this third factor. This is the question of ethics or morals. The writer knows of two individuals who gave up executive positions in their respective companies in recent years because they considered the chief executives of their organizations were indulging in unethical practices. Both men were vice-presidents and had been with their companies for more than five years.

It is the writer's opinion, based on many years of experience that only a major change can alter the personality of a company.

The recent graduate looking for his first job should exercise great care in deciding which company he would like to become associated with. To determine whether he will feel mentally comfortable with that company, he should visit the plant, talk to several persons in the organization, and obtain the trade's opinion of the particular firm to assist in evaluating the company. More and more companies today are making more thorough investigations of prospective employees than ever before so that it is to the applicant's and the company's advantages to find out as much as possible about each other before making a choice.

The "personality" of a company can also have an effect on market trends and thus must be studied by market analysts when studying possible competitive products. Several times of late the writer has been informed by detergent companies that they are only interested in new products which require considerable know-how to produce and thus command premium prices. When a product becomes a well established commodity they lose interest in it since they cannot compete price-wise with large scale production. These plants are very research minded. They sell products plus service.

The representative of a foreign company put it very well the other day when he said, "We are



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looking for products which are in the medium know-how range—too difficult for our small competitors to get into, and yet not so soul-shaking as to encourage the giants to erect plants beside us." Quite a problem! Some few companies will consider no product which uses raw materials they sell, as they do not want to compete against their customers. This breed of company is fast becoming extinct. On the other hand there is the class of company that will consider the contract manufacture of any product for which their equipment is or can be made available. This type of operation is often a nightmare for the market researcher. The product trend in recent years in the detergent field is very definitely toward flexibility and diversification.

THE nitrogen bearing compounds will bear close watching in the future. There is no reason to believe that detergent products made from such material will compete price-wise with the present detergents. However, certain of these products do display cationic activity, can be made in solid form and under certain special conditions do display excellent detergent properties on both soft and solid surfaces. Synthetics took over a large part of the soap market because they could do things which soap could not do. People were willing in the early stages to pay a premium for that type material. Is it not possible that cationic cleaners heretofore considered only in the role of textile softening agents or germicides do things that perhaps neither synthetics or soap can do? In such case, perhaps the pendulum will swing once more and a novel class of super cleaning agents may appear.

For example, the German product "Medialan A" ($RCON(CH_3)CH_2COONa$ was found to be an excellent detergent and superior to soap as a softening agent. Although hard water caused precipitation, the calcium salts were comparatively non sticky so that they did not have the objectionable characteristics of lime soaps. It was recommended for use where its mild degreasing action could command respect—namely in shampoos. It never got anywhere, however. For years General Dyestuff kept it listed as an available product, but the writer never ran across anyone who was using it. It had good properties but apparently not enough. The Germans attributed its softening properties to its low degreasing power, but in view of our present knowledge of this type compound, it seems more probable that the softening action was due to its cationic nature. Recently a board of medical doctors in Germany was reported to have considered it the best skin detergent they had ever tested.

Recent interest has been revived in this type product, where it is used in tooth paste. When the oxygen is removed from the chain, the product becomes more cationic and displays interesting bacteriostatic properties according to U. S. patent No. 2,468,012. Such compound could be represented by $RNHCH_2CH_2COOX$ where its parallel structure to the Medialans can be noted.

Now, it is desirable to have detergents, particularly toilet bar types, that are bacteriostatic. The sale of soaps with "G-11" can testify to this.

Would the public be interested in paying a premium price for a dishwashing detergent which would be a bacterostatic agent in itself, which would clean satisfactorily and in addition would be substantive to the skin? How would such products behave as shampoos? As shaving creams? As an all synthetic detergent bar? These are questions which the industry may find very interesting or embarrassing depending on which side of the fence it happens to be sitting. One thing is certain, products of this class cannot be handled as just another raw material for formulation. They are cationic and are not compatible with many of the commonly accepted builders of today.

Ultrasonic Metal Cleaning

Ultrasonics yield the best results in the history of industrial metal cleaning, when employed as a last stage where other methods do not help, according to William L. McCracken, Detrex Corp., Detroit. Dr. McCracken read a report on industrial cleaning before the 22nd annual meeting of the American Society of Tool Engineers, held in Philadelphia last month. In support of this claim for ultrasonic cleaning he cited the example of hydraulic valve lifted assemblies for one of the modern V-8 automobile engines. Vapor spray degreasing plus ultrasonics removed 15 times more surface dirt than the method used in the plant prior to the test, he said.

Trade Marks...

(*From Page* 89)

compound used in a household cleanser, detergent, and disinfectant. Filed April 29, 1953 by West Disinfecting Co., Long Island City, N.Y. Claims use since April 1, 1953.

5-star Kolortreet—This for color shampoo. Filed May 22, 1953 by Duart Manufacturing Co., San Francisco. Claims use since May 1, 1953.

Magic Snow—This for household cleaner. Filed July 23, 1953 by Worrie C. Jewell, doing business as W. C. Jewell Chemical Co., Greenville, S.C. Claims use since January, 1948.

Swan—This for soap. Filed August 7, 1953 by Lever Brothers Co., New York. Claims use since June 11, 1953.

Marvelous—This for shampoo. Filed August 3, 1953 by Richard Hudnut, New York. Claims use since March 4, 1953.

Disit—This for disinfectant, sanitizing and deodorant cleanser. Filed September 8, 1953 by Abco, Inc., McKeesport, Pa. Claims use since about July, 1949.

Phyltral—This for cleaner for glazed, wooden and painted surfaces and automobiles, etc. Filed September 8, 1953 by Abco, Inc., McKeesport, Pa. Claims use since June, 1950.

Vit—This for liquid cleaning composition for hard surface floors, urinals, etc. Filed September 8, 1953 by Abco, Inc., McKeesport, Pa. Claims use since about August 1949.

GLO-ON—This for automobile and furniture polish. Filed March 10, 1953 by Emery D. Jackson, doing business as Rev. Ed Jackson, Indianola, Miss. Claims use since December 4, 1952.

New Solvay Cleaner

Solvay Process Division, Allied Chemical & Dye Corp., New York, recently announced a new deodorizing and cleaning material called "Orthosolv". The product, which is an emulsifiable chlorobenzene, can be used for suppressing odors, cleaning fuel lines and storage tanks, removing grease and tars, sewage treatment, spraying land fill areas, etc. According to the company, the product will mask odors, prevent growth of microorganisms that produce sulfides, and prevent the growth of fungi. "Orthosolv" is a dark colored liquid which readily emulsifies in water. It will form a stable emulsion which can be stored over a wide range of concentrations, the company states. An advantage of the product is that it can be used as a water emulsion solvent cleaner and can be flushed away with additional water or steam jennies.

—★—

First Machinery Moves H.Q.

First Machinery Corp. has consolidated executive offices, warehouse stock, rebuilding shops, engineering and fabrication departments under one roof, effective May 1, according to a recent announcement by Fred R. Firstenberg, president. First Machinery now occupies an entire city block at 209-289 Tenth Street, Brooklyn, N.Y., a location offering many transportation advantages, according to the announcement.

—★—

Two New Rug Cleaners

Two new rug and upholstery detergents for in-plant and location cleaning were introduced recently by American Alcolac Corp., Baltimore, Md. "Sipex S" and "Sipex 802" are lauryl alcohol sulfates which work in either hard or soft water on woolen, cotton, and synthetic fabrics. The products leave no sticky residue which might encourage rapid resoiling according to John Andre, executive vice president and director of sales. Any "Sipex' remaining on the fabric after cleaning is said to dry into a fine powder which is easily removed with a vacuum cleaner.

—★—

Adds to "Hystrene" Line

"Hystrene T-45" solid saturated fatty acid was introduced recently by Atlas Powder Co., Wilmington, Del. A 55 percent palmitic-45 percent stearic product, the new acid is said to show great color stability even at elevated temperatures, low iodine value and unsaponifiables. Like other members of the "Hystrene" line T-45 is made by the "Trendex" solvent refining process. Atlas is exclusive distributor for these products which are made by Trendex Division, Humko Co., Memphis, Tenn.

—★—

New D & O Catalog

The latest price list of Dodge & Olcott, Inc., New York, dated March, 1954, was issued recently in a new pocket size format. In the future the firm will publish its catalog at intervals of three months, because of the variable character of current essential oil markets.

—★—

Turco Has New Cleaner

"Turco Jet Action" automatic small parts cleaner and "Jetisoil" solvent for use in the cleaner were introduced recently by Turco Products, Inc., Los Angeles. The unit, which is designed for attachment to any air hose, substitutes air agitation of solvents for hand scrubbing by means of eight air jets in the six and one-half gallon agitator. The turbulence pattern is said to provide for maximum penetration, continual flushing, and precipitation of scale and sediment to the sump in the bottom of the tank. Carburetors, fuel pumps, and other small parts are decarbonized and cleaned in about fifteen minutes, according to the manufacturer.

Five gallons of "Jetisoil" solvent are delivered with each "Jet-Action" parts cleaner. The product is said to stand up under air agitation with a minimum loss through evaporation and to be free from offensive odors.

New Swift Fatty Acid

A new highly distilled fractionated fatty acid, known as oleic acid "No. 905", was introduced recently by Swift & Co., Chicago. The product is the result of a new manufacturing process allowing for more selective extraction of color bodies and unsaponifiable material. High acid number, low titer, good color stability and clarity are claimed for the new acid, specifications for which are very close to those of high grade red oil. Detailed information is available from the industrial oils department of Swift & Co., Hammond, Ind.

New Patents

(*From Page* 115)

substantially completely to dissolve the reactants, at the reflux temperature of said reaction mixture to form the 1-acyloxy derivative thereof, separating precipitated metallic selenium, reacting said derivative while retaining it in the remaining resulting reaction mixture with hydrogen chloride in the presence of zinc chloride at the reflux temperature of the latter reaction mixture to convert said derivative to 1,4,5,6,7,8,8 - heptachloro-3a, 4,7,7a-tetrahydro - 4,7 - methanoindene, and separating and recovering the latter as the product of the process.

No. 2,673,208. Process for Removing Organic Solvent from Aqueous Detergent Solutions, patented by Herbert Widener Andrews, Westfield, N. J., Clifford Le Roy Carpenter, Brooklyn, N. Y., and Harold George Houlton, Ridgewood, N. J., assignors to Colgate-Palmolive Company, a corporation of Delaware. A continuous process is described for removing organic solvent from aqueous-organic extract solutions containing salts of organic materials selected from the group consisting of organic sulfonic acids and sulfuric acid esters to produce aqueous products containing salts of said organic materials having excellent detergent properties. This process comprises continuously introducing said aqueous-organic solvent extract solution and a heel-part of aqueous product containing salts of said organic materials into a vaporization zone maintained under moderate vacuum, the ratio of said heel-part to said extract solution being about 5:1 to about 20:1 parts by weight respectively, heating the resulting mixture to a temperature within the range of about 150° to 260° F. in said vaporization zone, and continuously withdrawing aqueous product containing salts of said organic materials substantially free of organic solvent.

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Want further information?

H. W. HAMILTON, *Secretary*

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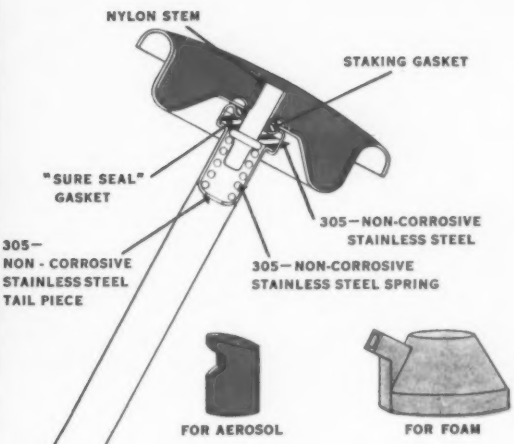

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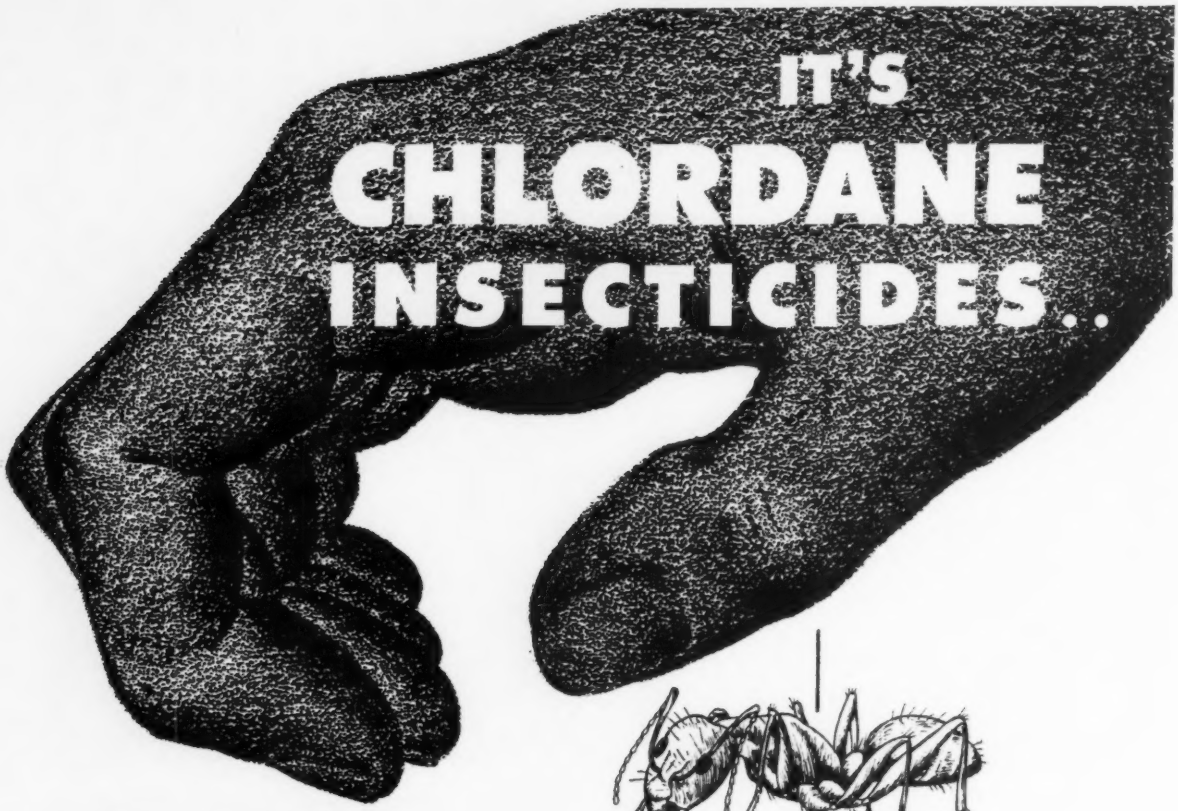

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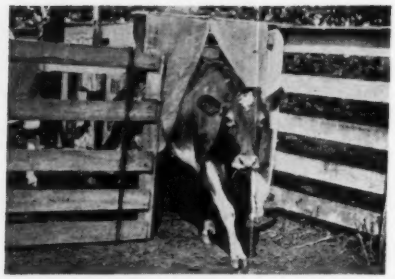

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AEROSOL FILLING AND TESTING LAB INSTALLED

Complete Testing Service Now Available to Aerosol Manufacturers

In the popular and rapidly expanding aerosol industry, there naturally occur many "growing pains." While these are simply a sign of and attendant upon all growth, they must be carefully ironed out well in advance of actual product marketing, and for best results such work must be done on an individual basis. An amazingly vast and ever increasing number of products are now being marketed in aerosol form, and with each item requiring a perfume ingredient the problems of solubility, leakage, corrosion, compatibility, shelf life, etc. must be worked out by the aerosol chemist. In order to encompass this entire operation in a minimum of time with maximum results, all equipment is custom made. D&O has constructed another new laboratory, completely equipped for the filling and testing of aerosol packages.

Two Filling Systems Used

Both an Aerosol Pressure Filling System, which is of an experimental capacity and not designed for production, and a Cold Filling System have been installed. In aerosol packaging the Pressure Filling System is best suited for foam products, such as shave creams, shampoos, hand lotions, etc., while the Cold System produces better results in such items as insecticides, room deodorants, colognes, hair lacquers and antiperspirants. A special water bath for testing finished cans for leakage after sealing has also been installed, and maintains a temperature of 130°. Cans that pass the water test are then placed in a Corrosion Box, a specially built cabinet capable of maintaining a desired uniform temperature over a predetermined period of time. This step is designed to test the compatibility of the finished aerosol product with can components . . . walls, nozzle, etc., and determine, if any, the amount of corrosion or clogging. For example, a can placed in the Corrosion Box for one month at a constant temperature of 140° is equivalent to a year's shelf life. After removal cans are cut apart and examined minutely for evidence of incompatibility. Finished aerosol products, that have successfully passed all required tests will be forwarded to the manufacturer in either a 6 or 12 oz. can, with specially designed D&O label.

A pre-packaging step. Perfume raw materials are tested for solubility in the propellant to be used.

An aerosol can containing a shave cream is filled by Pressure Fillng System. All foam products must utilize this manner of filling.

In the Cold Filling System, gas is drawn from the spigots of the deep freeze into a flask.

Aerosol can is filled from flask. For insecticides, colognes, room deodorants, antiperspirants, hair lacquers, etc., the cold system of filling gives the best results.

Filled cans are crimped or sealed with special capping machine. Type of valve used is determined by product to be packaged.

The water bath, which is maintained at a temperature of 130°, shows up any possible leakage after capping.

All cans that have passed the water bath test are then placed in the Corrosion Box for checking compatibility of contents with can, during actual shelf life of the product.

Aerosol products that have passed all tests are finally checked for stability of ingredients.

Petrolite

MICROCRYSTALLINE AND SYNTHETIC WAXES

offer outstanding physical characteristics and superior specifications

PHYSICAL CHARACTERISTICS

HARDNESS
HIGH GLOSS
UNIFORMITY
PURITY
TOUGHNESS
FLEXIBILITY

PETROLITE WAX	MELTING POINT °F	PENETRATION	COLOR NPA	ACID NO.	SAP. NO.	USES
15	180 min.	4 to 6	4-5	14-16	50-60	Emulsion Polishes
23	180 min.	4 to 6	4-5	20-25	55-65	
36	180 min.	5 to 7	5-6	30-35	75-85	
50	180 min.	3 to 5	dark	10-20	65-75	Printing Inks Carbon papers
180	180 min.	15 max.	2-2.5	Nil	65-75	Paper Coating Packaging
200	190 min.	8 max.	brown	Nil	65-75	Protective Coatings
500	190 min.	8 max.	2-2.5	Nil	65-75	Polishes
700	190 min.	4 max.	2-2.5	Nil	65-75	
1035	195 min.	2 max.	2-2.5	Nil	65-75	
JET Black	185 min.	11 to 16	black	Nil	65-75	Protective Coatings
ESTAWAX* 20	210 min.	2 max.	3 max.			Solvent Paste Polishes Solvent Liquid Polishes Phonograph Records Carbon Paper
ESTAWAX* 25	210 min.	2 max.	3 max.			

*Synthetic.

Price information, technical data and samples are available on request.

Petrolite waxes are packed in cardboard cartons containing 8 ten-pound slabs per carton. Jet black wax is packed in 300 lb. drums. Nos. 700, 1035 and the Estawaxes are available either in the 8 ten-pound slab cartons, or powdered, approx. 170 lbs. to the fibre drum. Shipments are made from warehouse stocks at Jersey City, N. J., Chicago, Ill., Los Angeles, Calif., or from the refinery at Kilgore, Texas; F.O.B. shipping point nearest customer.

PETROLITE CORPORATION

WAX DIVISION

Chrysler Building, New York 17, N. Y.

P. O. Box 390, Kilgore, Texas

PW 54-1

Rejections giving you trouble?

Use the triple-tested PRESDOME VALVE

No aerosol product is better than its valve—and no valve is better than Schrader's . . . produced with fully automatic machinery . . . nothing but raw materials bought outside. Schrader has the greatest research and manufacturing facilities.

The Schrader Aerosol Valves use the same time-tested seating principle as used in the Famous Schrader automotive tire valve.

Schrader Aerosol Valves mean lower rejection rates because they receive the most thorough inspection . . . they're triple tested . . . every critical component part 100% machine tested for correct tolerances. Elimination of "dud" returns from retailers protects the reputation of your product.

Arrow Points to Direction of Spray
Flexible Portion Counter-Sunk
Valve Pin
Solid Button Recessed for Valve Pin
Solid Plastic Dome Grips Closure Shoulder After Loading

Schrader Aerosol Valves offer improved performance. They are positive sealing, with quick positive spray shutoff. Good-looking Presdome Caps give easy and comfortable finger-tip operation to your aerosols. You merely press the countersunk dome. Presdome Caps also have eye-catching sales appeal! Various Colors can be made to match your label on request.

Tamper-Proof Locking Tab

Schrader
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AEROSOL VALVES made by the manufacturer of the Standard Tire Valve since the first Automobile

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DURABILITY
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GEIGY METHOXYCHLOR FORMULATIONS

they're positively deadly to bugs!

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(90% methoxychlor)

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(20% methoxychlor solution)

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(50% methoxychlor wettable powder)

GEIGY 5% METHOXYCHLOR DUST

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FLORASYNTH OFFERS AN EXTENSIVE LINE OF HIGHLY EFFECTIVE PERFUME BOUQUETS, NEUTRALIZERS, AND DEODORANTS FOR YOUR INSECTICIDES . . . AS WELL AS FOR MANY OTHER INDUSTRIAL USES.

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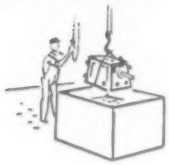
ORTHOSOLV*

...the Emulsifiable Orthodichlorobenzene

for use as a Water Dispersible Solvent



Deodorant

Sludge Solvent

Now available for the first time at a practical price—an orthodichlorobenzene that is readily emulsifiable in water!

SOLVAY ORTHOSOLV can be sold in concentrated form or diluted with water or kerosene. It can be packed in aerosol containers.

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Typical Markets and Uses for SOLVAY ORTHOSOLV:

As a Water Dispersible Solvent

SOLVAY ORTHOSOLV can be packaged and sold for the removal of heavy greases, tars and oils. It can be used for cleaning garage floors, de-greasing machinery, tools and metal parts. It is easily removed by flushing with water or steam-jennies. ORTHOSOLV's high flash point makes it a safe solvent.

As a Deodorant

This product can be repacked and sold as a cleaner and deodorizer of garbage and refuse containers. Orthosolv is an *effective, efficient, economical* agent for treating areas with objectionable odors. It can be used with any type of spraying equipment including aerosol containers.

As a Sludge Solvent

ORTHOSOLV can be marketed as an additive to fuel oil tanks. It dissolves heavy sludge. When used as a sludge solvent it can be cut back with kerosene.

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Gentlemen: Please send me—AT NO COST OR OBLIGATION—
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☐ Complete data and information on SOLVAY Orthosolv

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PACKAGING

McGUIRE AND COMPANY, leaders in custom packaging since 1880, now offers aerosol packaging for the first time in the San Francisco Bay area... the hub of Western distribution.

Economy-minded manufacturers will find McGuire and Company the natural choice for aerosol packaging in the West, for our extensive research, formulation, manufacturing and packaging facilities spell the difference between limited, localized distribution, and fast, efficient access to the entire Western market.

McGuire's SERVICE-PLUS Features...

- *Packaging in all types of aerosol containers: dome, concave, glass.*
- *Supply problems overcome... we can furnish containers, cartons, propellent and valves.*
- *No delay or extra expense. Aerosol cans now manufactured and available in the San Francisco Bay Area.*
- *Complete laboratory facilities.*
- *Our sole function in the aerosol field is to custom-package* your *product.*

In the DISTRIBUTION CENTER of the WEST

DISTRIBUTION-PLUS in the San Francisco Bay area, where rail, air, highway and water meet to form the West's most *strategic* distribution center. McGuire and Company, with railroad sidings, truck platforms and spacious warehousing facilities, will deliver your aerosol-packaged products directly to the San Francisco Bay area market... to the Northwest: Portland, Seattle and Vancouver... South to the Metropolitan Los Angeles market... to Hawaii and the Pacific.

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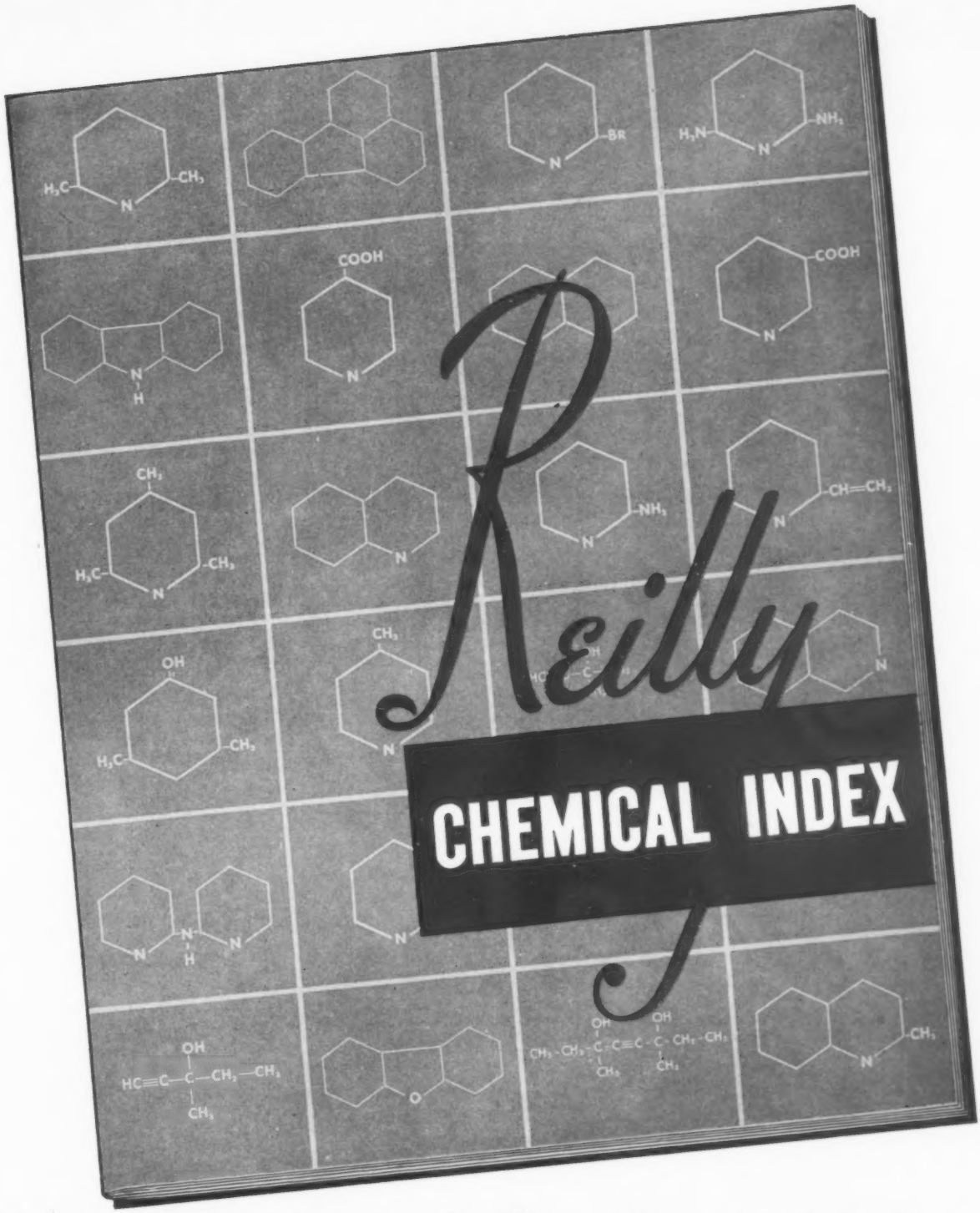

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write to REILLY TAR & CHEMICAL CORPORATION

1618 Merchants Bank Building Indianapolis 4, Indiana

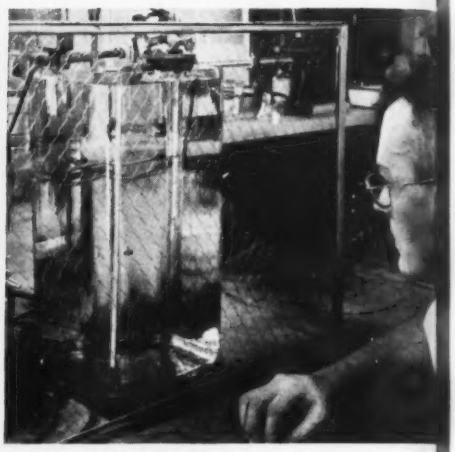
An introduction to laboratory services available to users of "FREON" propellents

TECHNICAL ASSISTANCE ON AEROSOL FORMULATIONS

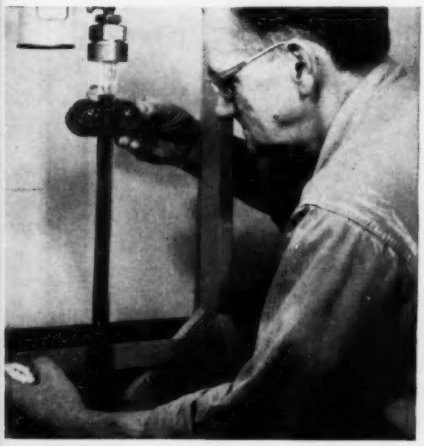
There are many steps in the formulation of aerosol products that make experimental research important. A few of these steps are pictured below. To help manufacturers develop new aerosol products or improve existing aerosols, Du Pont will gladly cooperate by utilizing its technical-service laboratories in such cases as these:

COMPATIBILITY . . . one of the first requirements of an aerosol formulation. Chemists in Du Pont's "Kinetic" Technical Service Laboratory determine suitable "Freon" propellent for various ingredients.

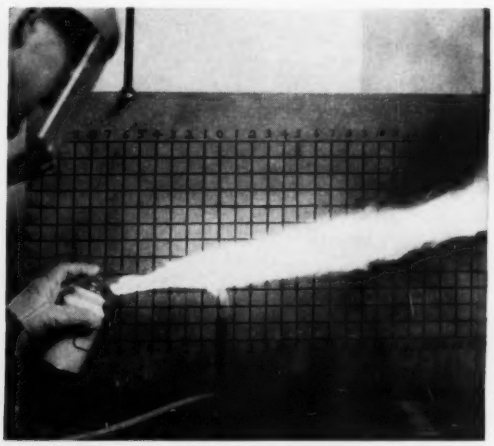
PARTICLE SIZE . . . an important characteristic of insecticidal aerosols. Tests are conducted to design formulas that meet particle-size requirements for maximum effectiveness. This is particularly necessary with aerosol insecticides and room deodorants.



DENSITY MEASUREMENT . . . concerns packers of aerosol products. Here, chemists check different aerosol formulations. High density of "Freon" propellents permits low total volume of formula.



VISCOSITY . . . test measurements are made of aerosol paints, plastics, lacquers to perfect their coating qualities. If unsatisfactory, chemists recommend a change.



FLAMMABILITY . . . a routine test of obvious importance to every aerosol manufacturer. Nonflammable characteristic of "Freon" propellents is an important reason why they're used in most aerosols.

WATER CONTENT . . . a study is made by the "Karl Fischer" method in analyzing water content of various formulas. Dryness of "Freon" propellents helps keep moisture low.

KINETIC

"Freon" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

"FREON" Safe Propellents

If you are a manufacturer considering the production of a pressure-packaged product and would care to avail yourself of these services in formulating an aerosol, address: E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div., Wilmington 98, Delaware.

Visit the Du Pont suite at the C. S. M. A. convention, Netherlands Plaza Hotel, Cincinnati, May 23, 24, 25, 1954

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TO insecticide makers, who may play golf, we offer professional help of two kinds.

First, as a friendly gesture, we'd like to send you Ben Hogan's 186 page book on "Power Golf." This is practical and helpful to the businessman week-end golfer.

Second, on a strictly business basis, we would like to send our representative with professional help in making insecticides. This includes practical and helpful recommendations on formulas, ingredients, synergists, methods, and short-cuts.

These professional helps are free. The golf information is from one of our finest golfers. The insecticide information is available from one of the best known suppliers of insecticidal ingredients in America. There is no obligation or charge. Send the coupon today.

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by Ben Hogan... 186 pages of helpful information plus professional help in making insecticides.

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THE new HANDBOOK of PEST CONTROL by Arnold Mallis, a completely revised edition, is off the press and available for distribution.

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▲ This newest pest control reference volume deals primarily with household and industrial pests, insects, rodents, etc., their habits, identification, and latest methods of control. It is the most complete work of its kind ever offered in a single volume.

▲ Those who have used the original HANDBOOK by Mallis undoubtedly will want this new, up-to-date volume, a standard reference book which should be in the library of every pest control operator, insecticide manufacturer and marketer, entomologist, chemist and others interested in modern materials and methods of pest control.

▲ The new HANDBOOK of PEST CONTROL by Arnold Mallis measures six by nine inches, has a sturdy binding in green cloth, gold stamped. The book comprises twenty five chapters, running to a total of 1067 pages and is printed on durable, long-lasting paper.

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rats and mice
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stored product pests
spider or ptinid beetles
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flies and mosquitos
spiders
mites
ticks
miscellaneous household pests and chemicals used in their control

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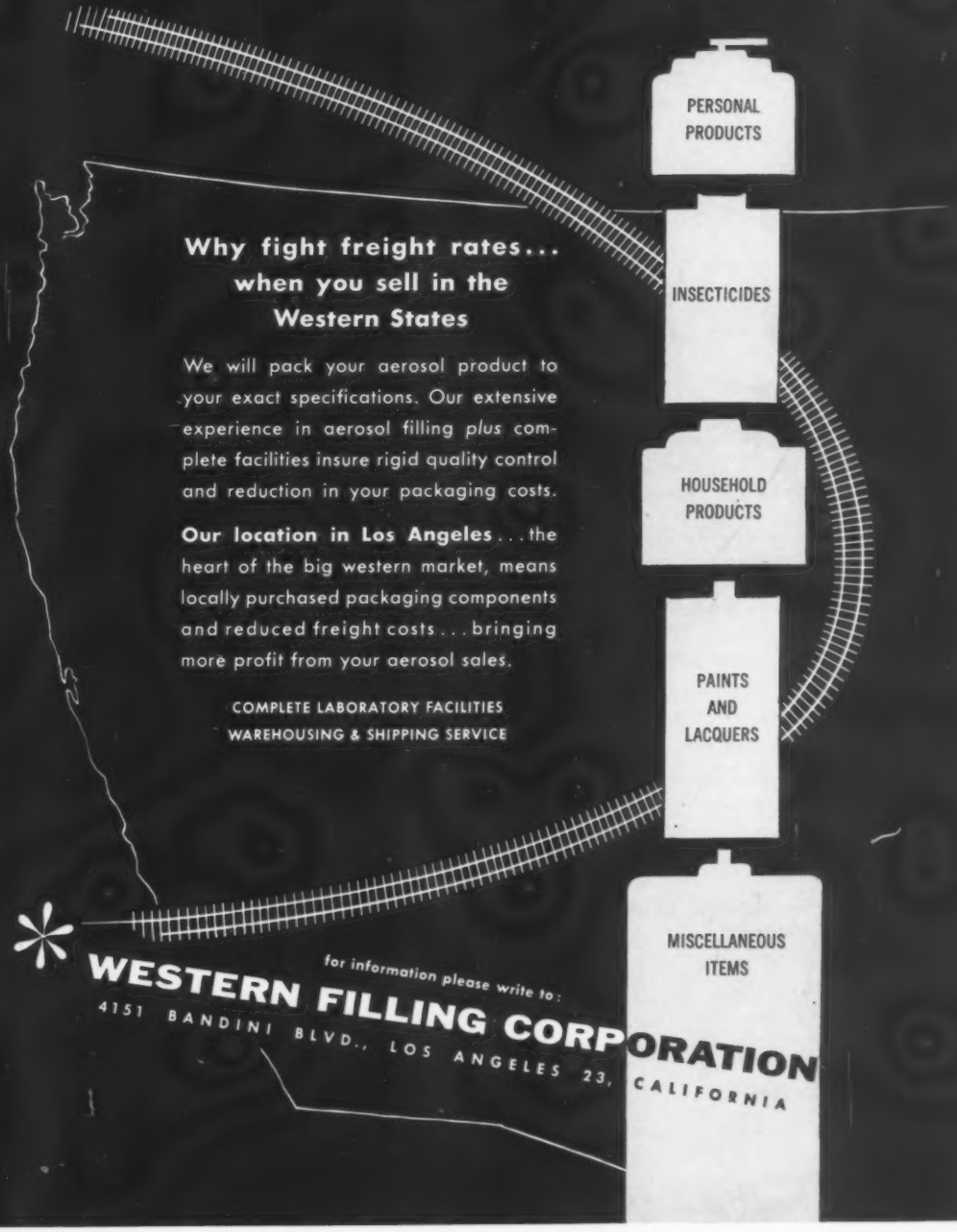
Announcement:

Here is extra profit in your Aerosol product!



Why fight freight rates... when you sell in the Western States

We will pack your aerosol product to your exact specifications. Our extensive experience in aerosol filling *plus* complete facilities insure rigid quality control and reduction in your packaging costs.

Our location in Los Angeles . . . the heart of the big western market, means locally purchased packaging components and reduced freight costs . . . bringing more profit from your aerosol sales.

COMPLETE LABORATORY FACILITIES
WAREHOUSING & SHIPPING SERVICE

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WESTERN FILLING CORPORATION

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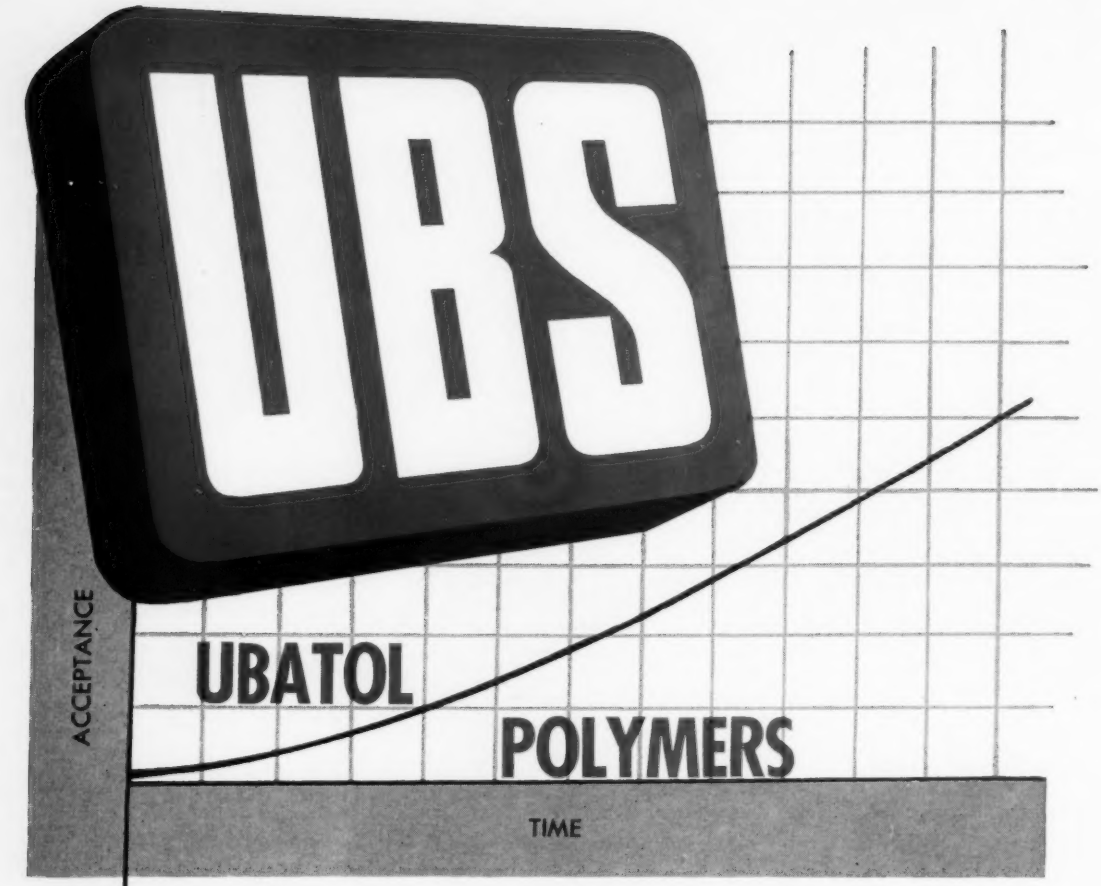

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The UBS trademark on Ubatol Polymers has earned the respect and enthusiastic acceptance of the floor wax industry. The growing use of Ubatol has proven the value of a specifically designed floor wax polymer.

Are you benefiting by the improved formulations possible? UBS welcomes the opportunity to work with you in developing formulas based on low cost polymer emulsions.

Samples and literature upon request.

UBS
Reg. T.M.

UNION BAY STATE
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from the Laboratory of Aerosol Research comes the great new

K-38 AEROSOL VALVE

Engineered for both cold filling and pressure filling.
Easier dispensing principle lessens finger fatigue.
Economical loading—fewer rejects.
Available with internal metering orifice in 4 sizes . . . .012, .0135, .016, .020

Pressure-fills faster than any other valve *on the market!*

THE K-38 AEROSOL VALVE is literally two valves in one. A new engineering principle, discovered in our laboratory allows quicker intake and more uniform dispensing. Available with smartly designed metal or plastic protective cover.

Aerosol Research Co.—pioneers in the manufacturing of aerosol valves and originator of the two-piece paint valve—is constantly working to bring better valves to the aerosol field. A complete staff of qualified research personnel is ready to help you solve your aerosol problems. We invite your inquiry. Samples and prices sent on request.

Aerosol Research Company

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what's your biggest packaging worry?

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Liquid or pressure, spray or foam—Fluid Chemical can help you here. First with contract filling of glass aerosols, Fluid knows what's best for your product.

DESIGN?

Size, shape, color, label, material—important decisions! Fluid offers assistance from the depth of long experience on such vital matters.

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Fluid's well equipped laboratory and skilled technical staff can help formulate your product for liquid, spray or foam packaging for complete consumer satisfaction.

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Eight-car railroad siding—double shipping dock—complete warehousing and handling facilities assure quick deliveries.

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Fluid's rigid inspection system—in the lab and on the line—assures the constant quality of your product, from the first off the line to the last.

VOLUME?

Fluid is geared to handle any production quantity, large, or small, efficiently. Aerosols to 50,000 units daily, liquid filling 200,000.

Specialists in contract packaging of aerosol and liquid products

FLUID CHEMICAL *Company, Inc.*

Chemical Manufacturers

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Thirty-three years of specializing in contract packaging, Fluid's only business is producing and packaging your product to your specifications on your schedule. Fluid is never your competitor.

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Sure! Everybody's got a Pine Oil Disinfectant . . .

BUT THERE'S ONLY ONE

Varco Pine

VarcoPine has captured the true forest green color from pine needles! And along with it a ***new, lighter, nicer*** pine scent with a decided tang! It is super-powered too. One gallon of VarcoPine makes 100 gallons of powerful germ-killing solution!

VarcoPine *is* different from any other pine oil disinfectant you have used!

Better 6 Ways!

1 Natural green color of pine needles.	**2** Immediately soluble in hard or soft water.	**3** Perfect stability.
4 Snow-white emulsion.	**5** Made from pure steam distilled pine oil.	**6** Refreshing NEW pine scent.

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Please rush my sample of VarcoPine at once and quote me in various size containers.

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HEAVY DUTY DISINFECTANT
For efficient and safe disinfecting and deodorizing in the home, schools, clubs, hospitals.

POWERFUL GERMICIDAL ACTION
Destroys putrefactive bacteria usually causing foul odors. Economical dilutions.

DISEASE PREVENTATIVE
Excellent as a foot bath for prevention of Athlete's Foot.

DEODORANT SPRAY
If it is impractical to mop, Mint-O-Phene can be effectively used as a deodorant Spray.

BRILLIANT GREEN COLOR
Its cool green color and fragrant mint odor helps to make MINT-O-PHENE a winner in sales appeal.

COEFFICIENT 5, F.DA. Method

SEND FOR LATEST PRICE LIST CONTAINING A WIDELY DIVERSIFIED LINE OF BAIRD & McGUIRE CERTIFIED PRODUCTS.

Baird's B M

THE ONE AND ONLY . . . .

Baird & McGuire, Inc.
HOLBROOK, MASSACHUSETTS

CSMA Meets In Cincinnati

Results of insecticide, aerosol surveys and panel on toxicology of detergents highlight Chemical Specialties Mfgrs. Assn. meeting at Netherland Plaza, May 24-25

A DIVERSIFIED and interesting program of papers, panels and reports keynoted the opening of the 40th annual midyear meeting of the Chemical Specialties Manufacturers Assn. being held May 23, 24 and 25 at the Netherland Plaza Hotel, Cincinnati. Awaited with special interest by the well-attended meeting were the surveys for 1953 of the aerosol and insecticide industries. Both of these reports were being looked forward to because they afford comparisons with earlier surveys conducted by C.S.M.A. The Insecticide Survey will be presented during the divisional meetings on Tuesday afternoon, May 25.

Among other program highlights are a panel discussion of the toxicology of soaps and synthetic detergent compositions, a review of what has happened in the household insecticide field since 1948, a report on the latest findings on the toxicity of DDT, a discussion of the formulation of aerosol cosmetics and a study of chemical specialties for automotive use. New developments in floor care products, including a paper on the use of polystyrene type latices in self-polishing floor waxes, will be covered in a session of the Waxes and Floor Finishes Division. The Disinfectants and Sanitizers Division hears a report on the merits of use dilution vs. phenol coefficient testing.

In all there will be three half-days given over to simultaneous individual or joint meetings of the six divisions of which C.S.M.A. is composed. One general session, Tuesday morning, May 25, will be held. Presided over by Dr. Emil G. Klarmann of Lehn & Fink Products Corp., New York, first vice-president of the association, it will feature reports of the C.S.M.A. officers. Melvin Fuld of Fuld Brothers, Inc., Baltimore, is scheduled to deliver his president's address at this time. However, because Mr. Fuld was injured by a compression sprayer shortly before the meeting, there was some uncertainty as to his ability to be present for the convention. At the general session Peter C. Reilly of Reilly Tar & Chemical Corp., Indianapolis, gives his report as treasurer and H. W. Hamilton presents the secretary's report.

C.S.M.A. general counsel, John D. Conner of Washington D.C., will discuss the legal aspects of marketing chemical specialties. The chairmen of the precautionary labeling committee and the legislative committee, N. M. Walker of Pennsylvania Salt Manufacturing Co., Philadelphia, and W. S. Jessop of U. S. Sanitary Specialties Corp., Chicago, respectively, give their reports at the general session.

Although officers and directors of the association are nominated and elected at the annual meeting in December, the administrative committees of the six divisions, including the chairmen and vice-chairmen, are nominated and elected at the midyear meeting. They do not take office, however, until the following year.

The two-day meeting formally opened on Monday morning, May 24. Association activities for most members, however, got underway the day before when registration began, and the board of governors as well as many committees and subcommittees held meetings on Sunday, May 23. That evening the president's reception was held in the association suite.

The social part of the meeting began functioning on Sunday evening May 23 with a reception and dinner given by Warwick Wax Co., Long Island City, N. Y. Other social events include the company open houses in various suites throughout the hotel from 5:00 to 9:00 p.m. Monday, May 24. The banquet and floor show, which is again open to women guests, will be held the evening of May 25. It will be preceded by the customary reception and cocktail party.

Group luncheons will be held Monday and Tuesday noon. The Monday luncheon, presided over by Melvin Fuld, C.S.M.A. president, will feature an address by Albert A. Stevenson, Deputy Officer in charge of the recently dedicated Robert A. Taft Sanitary Engineering Center in Cincinnati. Mr. Stevenson will discuss the work of the center. The name of the guest speaker for the Tuesday luncheon was not available as we went to press.

Although the program outline for this year's midyear meeting follows that of the past several meetings, with the exception that there is only one general session at this meeting as against the usual two, the December meeting in New York will revert to a full three-day meeting, which begins on Monday and runs through Wednesday.

Another departure from past meetings is an increased registration fee for non-members. If non-members register for the entire meeting the fee is $60. If they register on Tuesday, the fee is $55. Both include registrations, luncheons, cocktail party and banquet.

Program for the 40th Midyear Meeting Chemical Specialties Mfgrs. Assoc., Netherland Plaza Hotel, Cincinnati, Monday and Tuesday, May 24 and 25

Monday, May 24

Registration, Fourth Floor Lobby, 9 A. M. to 5 P. M.

Monday Morning, May 24

Aerosol Division—Pavillon Caprice

H. R. Shepherd, Presiding

9:00 a.m. Address of the Division Chairman, H. R. Shepherd, Connecticut Chemical Research Corp., Bridgeport, Conn.

Report of Nominating Committee. Election of Administrative Committee for 1955.

Committee Reports

"Ethyl Cellulose in Aerosol Applied Hair Lacquers and Artificial Snow", by Herman G. Philips, Jr., Hercules Powder Co., Wilmington.

"Formulating Aerosol Cosmetics", by E. P. Hay, General Aniline & Film Corp., New York.

"Pressurized Garden Aerosols from the Researcher's Viewpoint", by Floyd F. Smith, U. S. Department of Agriculture, Agricultural Research Center, Beltsville, Md.

2:00 P.M. "Aerosol Survey of 1953," by Frederick G. Lodes, Precision Valve Corp., Yonkers, N. Y.

Disinfectant & Sanitizers Division—North Hall

Russell G. Puhle, Presiding

9:00 A.M. Address of the Division Chairman, Russell G. Puhle, Tykor Products Division of Borden Co., Brooklyn, N. Y.

Report of the Nominating Committee. Election of the Administrative Committee for 1955.

"Investigations Relative to Principles of Disinfectants", by Milton J. Foter, U. S. Public Health Service, Robert A. Taft Engineering Center, Cincinnati.

"Clinical Evaluation of Germicidal Soaps", by A. Haldane Gee and I. S. Seidenberg, Foster D. Snell, Inc., New York.
Delivered by: A. Haldane Gee.

"Sanitizing Action of Roccal in Various Types of Water", by John W. Klimek and John Hays Bailey, Sterling-Winthrop Research Institute, Rensselaer, N. Y. Delivered by: John Hays Bailey.

"Bactericidal Activity of Fatty Acids and Related Compounds," by J. V. Karabinos and H. J. Ferlin, Blockson Chemical Co., Joliet, Ill.

Insecticide Division—South Hall

Dr. G. W. Fiero, Presiding

9:00 A.M. Address of the Division Chairman, Dr. G. W. Fiero, Esso Standard Oil Co., New York.

Report of Nominating Committee. Election of Administrative Committee.

"Product Damage Hazards with Insecticides", by Dr. R. E. Heal, National Pest Control Association, New York.

"Household Insecticides—What's Happened Since 1948?", by Ira P. MacNair, MacNair-Dorland Co., New York.

"Cyclethrin—A Readily Synergizable Pyrethrin-like Insecticide," by Dr. Harry L. Haynes, Howard R. Guest and Dr. Harry A. Spansburg.
Delivered by: Dr. Harry L. Haynes, Carbide and Carbon Chemicals Co., New York, N. Y.

Committee Reports.

Soap, Detergents and Sanitary Chemical Products Division—A, B, C and D.

Dr. D. H. Terry, Presiding

9:00 A.M. Address of the Division Chairman, Dr. D. H. Terry, Bon Ami Co., New York.

Report of Nominating Committee

Election of Administrative Committee.

Committee Reports.

PANEL: "Toxicology of Soap and Detergent Mixtures." Moderator: Dr. Louis C. Barail, New York.

"Toxicity of Soaps," by M. H. Faillie, assistant consulting biochemist, Dr. Louis C. Barail, consulting biochemist-toxicologist, New York.

"Toxicity and Sensitivity of Cosmetics and Cosmetic Bases", by Irwin I. Lubowe, M. D., Medical Consultant for Clinical Evaluation and Toxicology, New York.

"The Systemic Toxicity of Synthetic Detergents", by Francis F. Heyroth, M. D., The Kettering Laboratory, Department of Preventive Medicine and Industrial Health, College of Medicine, and Department of Biological Chemistry, University of Cincinnati, Cincinnati.

"Cutaneous Irritant and Sensitizing Effects of Synthetic Detergents", by Donald J. Birmingham, M. D., Chief Dermatologist, Occupational Health Field Headquarters, U. S. Public Health Service, Cincinnati.

"Emollients in Detergents", by Harold Suter, Wyandotte Chemicals Co., Wyandotte, Mich.

"Toxicology of Antiseptics and Perfumes", by R. E. Vicklund, Sindar Corp., New York.

Committee Reports.

Monday Afternoon, May 24, 1954

12:30 P. M.

Luncheon — Hall of Mirrors

Melvin Fuld, Presiding

LUNCHEON SPEAKER: Albert A. Stevenson, Deputy Officer in Charge, Robert A. Taft Sanitary Engineering Center, Cincinnati, "The Work of the Robert A. Taft Sanitary Engineering Center in Cincinnati".

Announcements: Some details of the 41s annual meeting.

Election of Nominating Committee.

Automotive Division—A, B, C and D.

A. James Coulter, Presiding

2:00 P.M. Address of the Division Chairman, J. M. Kimmel, Aeropak, Inc., Chicago.

Report of Nominating Committee. Election of Administrative Committee.

Committee Reports.

"Trends in Antifreeze Raw Materials", by R. E. Daley, Carbide & Carbon Chemicals Co., New York.

"Methods of Testing Radiator Compounds", by Dr. C. S. Kimball, Foster D. Snell, Inc., New York.

"Problems of Anti-Freeze Marketing", by William H. Adamson, Commercial Solvents Corp., New York.

"Preventive Maintenance in Automotive Cooling Systems", by J. J. Traviesis, United Motors Service Division, General Motors Corp., Detroit.

Waxes and Floor Finishes Division—North Hall

A. E. Budner, Presiding

2:00 P.M. Address of the Division Chairman, A. E. Budner, S. C. Johnson & Son, Inc., Racine, Wisconsin.

Report of Nominating Committee. Election of Administrative Committee.

"The Use of Polystyrene Type Latices in Self-Polishing Floor Waxes", by Lloyd H. Perry, and Robert S. Sweet, Union Bay State Chemical Co., Cambridge, Mass. Delivered by Lloyd H. Perry.

"Testing Floor Finishes," by Edwin R. Butler, Timber Engineering Co., Washington, D. C.

"Evaluation of Metal Containers for Chemical Specialties Products", by E. R. Blair, G. E. Curtis and L. E. Kneeland. Delivered by: L. E. Kneeland, American Can Co., Maywood, Ill.

"The Application of Chromatographic Technique to the Determination of the Hydrocarbon Content of Carnauba and Ouricuri", by Edward A. Wilder, S. C. Johnson & Son, Inc. Racine, Wis.

Committee Reports

2:00 P.M. Motion Pictures—Pavillon Caprice.

6:00 to 9:00 P.M. "Open House"

Tuesday Morning, May 25, 1954

General Session—Pavillon Caprice

E. G. Klarmann, Presiding

9:30 A.M. Report of the Secretary, by H. W. Hamilton, Chemical Specialties Manufacturers Association, Inc. New York.

Report of the Treasurer, by P. C. Reilly, Jr. Reilly Tar and Chemical Corp., Indianapolis, Ind.

Address of the President, by Melvin Fuld, Fuld Brothers, Inc., Baltimore.

"Legal Aspects Incident to National Marketing of Chemical Specialties," John D. Conner, C.S.M.A. Counsel, Washington, D. C.

"Copy Control", by E. M. Hughes, R. M. Hollingshead Corp., Camden, N. J.

Report of the Precautionary Labeling Committee, by N. M. Walker, Pennsylvania Salt Mfg. Co., Philadelphia.

Report of the Legislative Committee, by W. S. Jessop, U. S. Sanitary Specialties Corp., Chicago.

Tuesday Afternoon, May 25, 1954

12:30 P. M.

Luncheon — Hall of Mirrors

Harry E. Peterson, Presiding

Address: "The Use of Air Line Facilities in Chemical Specialties Industries" by J. M. Clapp, Asst. to President, United Airlines.

Insecticide Division—North Hall

Dr. George W. Fiero, Presiding

2:00 P.M. "New Trends in Household Insecticides", by George A. McLaughlin, McLaughlin Gormley King Co., Minneapolis.

"Insecticide Survey of 1953", by Dr. G. W. Fiero, Esso Standard Oil Co., New York.

"DDT Toxicity—Up To Date", by Frank Princi, M. D., College of Medicine, University of Cincinnati, Kettering Laboratory, Cincinnati.

"Toward Cleaner Food", by Walter W. Dykstra, Fish and Wild Life Service, Department of the Interior, Washington, D. C.

Committee Reports.

Disinfectant & Sanitizers Division—South Hall

R. S. Schumard, Presiding

2:00 P.M. Scientific Committee—General Open Meeting "Use Dilution Testing vs. Phenol Coefficient Testing", by R. R. Egan, A. G. Bowers, David Imhof and Alice Zuern, Gerson-Stewart Corp., Cleveland.

"Detergent Residues and Their Effect on Disinfectant Processes," by L. F. Ortenzio, R. L. Caswell, J. L. Friedl, and L. S. Stuart, Agricultural Research Service, U. S. Department of Agriculture. Delivered by: L. S. Stuart.

Joint Session—A, B, C and D. Automotive Division and Soap, Detergent and Sanitary Chemical Products Division

Presiding: A. James Coulter, Automotive Division, G. E. Barker, Soap, Detergents and Sanitary Chemical Products Division

2:00 P.M. "Corrosion Inhibitors for Hydrochloric Acid Cleaning Compounds," by D. F. Stauffer, Hercules Powder Co., Wilmington.

"Chemical Specialties for Automotive Use", by Stanley W. Coryell, R. M. Hollingshead Corp., Camden, N. J.

Committee Reports.

New Business.

Report of Soap, Detergents and Sanitary Chemical Products Scientific Committee, by Jay C. Harris, Monsanto Chemical Co., Dayton.

Aerosol Division—Pavillon Caprice

W. Earl Graham, Presiding

"Test Procedures for Aerosol Production", by R. A. Fulton, Entomology Research Branch, Agricultural Research Service, Beltsville, Md.

"Pressure Filling of Glass Aerosols" by Monfort A. Johnsen, Continental Filling Corp., Danville, Ill.

"The Industry's Safety Record to Date", by J. F. Brandenburg, Standard Oil Co., (Indiana), Chicago.

"Aerosol Filling Safety" by Joseph C. Pizzurro, Precision Valve Corp., Yonkers, N. Y.

"Marketing Aerosol Products," by Willard A. Pleuthner, Batten, Barton, Durstine & Osborn, New York.

Tuesday Evening, May 25, 1954

6:00 P.M. Cocktail Party — Pavillon Caprice

7:30 P.M. Banquet — Hall or Mirrors

INDUSTRIAL WEED

By W. S. Jackson
E. I. du Pont de Nemours & Co.

ONE of the fastest growing phases of industrial maintenance is chemical weed control. Fire risk, sanitation, community spirit and good housekeeping have put a premium on well-kept grounds; and high wages for labor have forced management to turn to chemicals for efficient, long-lasting weed control.

The fire hazard of dead or dry vegetation has long been a problem around petroleum installations and other places where highly flammable material is stored. Grass fires frequently spread to wooden buildings, lumber piles, outdoor stock-piles, etc. For example, the National Fire Protection Association has the following standard for retail lumber yards: "Weeds shall be kept down throughout the entire yard, and shall be sprayed as often as needed with a satisfactory weed killer, or cut or grubbed out. Dead weeds shall be removed after destruction by weed killer."

As a sanitation problem, weeds constitute a harborage for rats and other vermin, giving them easy access to buildings, food storage, and dumps. They form a breeding ground for insects, and may hold enough moisture to increase rusting and wood decay. They also trap and conceal rubbish, block drainage ditches, and interfere with maintenance and clean-up crews.

In railroad yards, weeds growing around wooden ties tend to hold moisture in the ground, and thereby promote rotting of the ties, and under some conditions can cause engine drive wheels to slip. Weeds may also trip brakemen getting on or off railroad trains, or collect enough dew to soak their pant-legs. Tall vegetation may even be a safety hazard if it obscures

CAPTIONS: THIS PAGE

Chemical weed control can save substantially on maintenance costs in situations such as that shown in upper left, where a wire fence runs around a power substation. Untreated growth in the upper left-hand corner shows the type of vegetation which has been killed.

Railroad trackage area near Cambria, O., (bottom, left) treated with weed killer to control growth in foreground. An untreated section is shown in background.

Weed killer has been applied from wall of metal building to outer edge of the railroad track in photo at upper right. The application clears up vegetation which would hold moisture, thus shortening the life of railroad ties and of sills and lower walls.

Weed killer sprayed around piles of lumber in bottom right of photo has killed vegetation—eliminating a fire hazard, and improving air circulation for better seasoning.

CONTROL

switches or signals, or short-circuits communication lines.

Along wire fences, vegetation may be a security hazard, as well as a maintenance problem. Natural growth of vines and grass may grow up a fence and tangle through it, obstructing visibility for guards or watchmen patrolling the fence-line. The close-growing vegetation may also hold enough moisture to rust the fence, provide sufficient cover to hide a man or to conceal accidental or deliberate breaks in the fence. Power mowers cannot get close enough to do a complete job. To depend on cutting, you have to provide for hand-clipping close to fences and around each post. Spraying a swath on each side of the fence with a chemical weed killer eliminates this problem. In fact, there are many places in industry where a non-flammable, long-lasting chemical weed killer can save many hours of work each season, and do a better job at less cost.

CAPTIONS: THIS PAGE

Before and after, top and bottom, respectively. Top photo shows electrical equipment stored in yard and nearly hidden by thick growth of weeds and grass. Yard is virtually free of vegetation in photo below, after treatment with chemical weed killer.

Chemical weed killers may be applied by the property owner if areas to be maintained are sufficiently large to warrant the investment in application equipment and to maintain a labor force for the purpose. If the size of the job is such that it does not warrant this investment, the services of a professional custom applicator are probably the answer. He usually has the trained personnel who are familiar with the equipment and chemicals and knows the best time and method of application. Where weed control work around a plant or lumber yard or in a railroad yard calls for two or three days a year, it is obviously more economical to hire a custom sprayer to do the work.

In many areas, local chemical suppliers work closely with custom applicators, or operate their own custom weed control service. The local supplier stocks the chemical and can furnish expert help for applying it.

Sometimes it is more economical for the customer to apply the chemical with his own personnel and equipment. Then the supplier may make a few deliveries each year to a central point, and further distribution of the weed killer is the problem of management. This is practical for isolated areas such as lumber camps, drainage districts. forest ranger stations and trails, and radio relay towers.

(*Turn to Page* 205)

Chemical herbicides open widening market based on reduced fire hazards, lower cost maintenance and better sanitation.

Exterior of some of the factory buildings at plant of M. Argueso & Co., in Mamaroneck, N. Y. Building at extreme right in foreground houses the research laboratories. Rear view of the Argueso factory (bottom left) showing part of seven car railroad siding and loading docks for trucks.

New Argueso office building (top, right) opened last year is directly across the street from the wax refining plant. Partial view of the interior of the general office is shown at bottom right. The modern one story building also features a large conference room and basement for record storage, etc.

Modern Wax Refinery

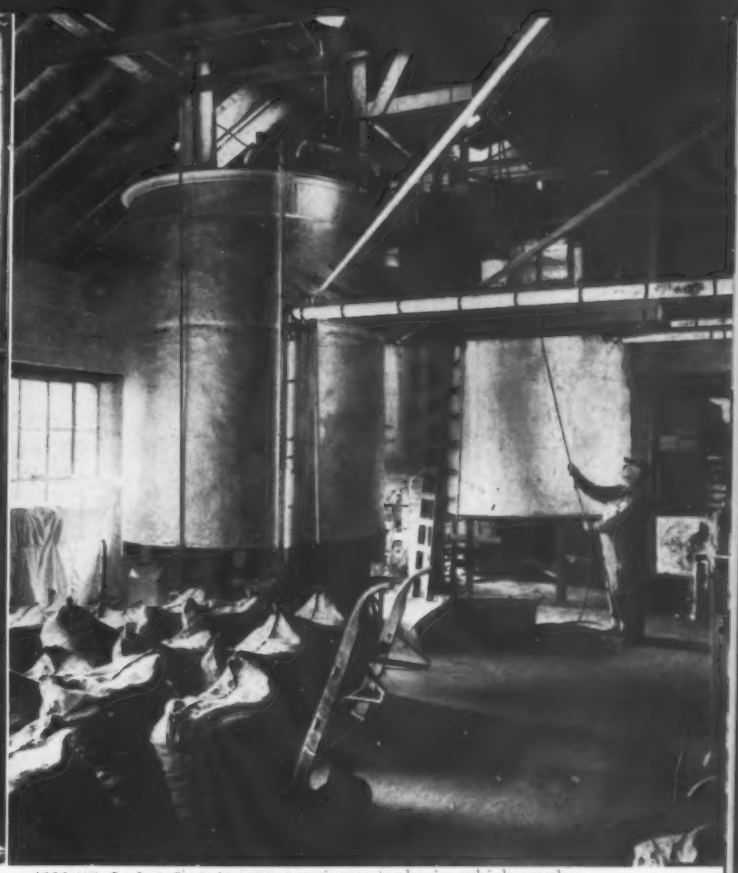
ALTHOUGH vegetable waxes are still gathered by hand in the primitive mode associated with the earliest days of this operation, the wax refinery out of which emerges a uniform industrial raw material represents the latest advance in chemical processing technique and knowledge.

Such a modern wax refining plant is that operated by M. Argueso & Co. in Mamaroneck, N. Y., a Westchester County suburb, located about 40 minutes by train northeast of New York City. The plant has a five-car rail siding and facilities to accomodate short and long haul truck shipments, which go out over nearby U. S. Route I. Being close to New York City, crude wax can be picked up from incoming steamers at docks there and quickly brought to the plant for processing and eventual shipment to major makers of wax products.

Because of the excellence of the transportation facilities offered by the plant site, the offices of M. Argueso & Co. were moved from Wall Street in 1953, after 45 years in the financial and importing district of New York City, to a new one-story and basement office building opposite the refining plant in Mamaroneck. At the same time, Argueso & Co. consolidated with Mamaroneck Chemical Corp., which had been formed in 1941 as an affiliated company to refine and process beeswax and such vegetable waxes as candelilla, carnauba, and ouricury. With nearly 50 years of experience, M. Argueso & Co., was founded by Manuel Argueso in 1908. Don Manuel, as he was known throughout Latin America and the trade, began his early activities in the sugar refining business prior to establishing his company in New York City. He was one of the early pioneers in the importation of istle fibers and candelilla wax from northern Mexico.

Due to his work in the fiber regions, he became interested in the production of candelilla wax, and installed the first modern candelilla factory in the State of Coahuila in the year 1916. At one time, the firm controlled over one million acres of ranch lands producing candelilla and istle fibers. Because of the land laws in Mexico, and the system of cooperative associations, operations are carried out with Government supervised Producers

Crude wax, such as carnauba as shown in photograph at upper left, is brought by truck to the Argueso plant from steamships which are unloaded at piers in New York City.



Close-up of a series of wax receiving tanks in which crude wax is melted prior to further purification and processing.

Plant of M. Argüeso & Co. embodies latest advance in chemical processing techniques

Unions. The marketing and distribution of these Mexican products are still done by Argüeso who, specializing in the sale of these commodities, know the requirements of the trade.

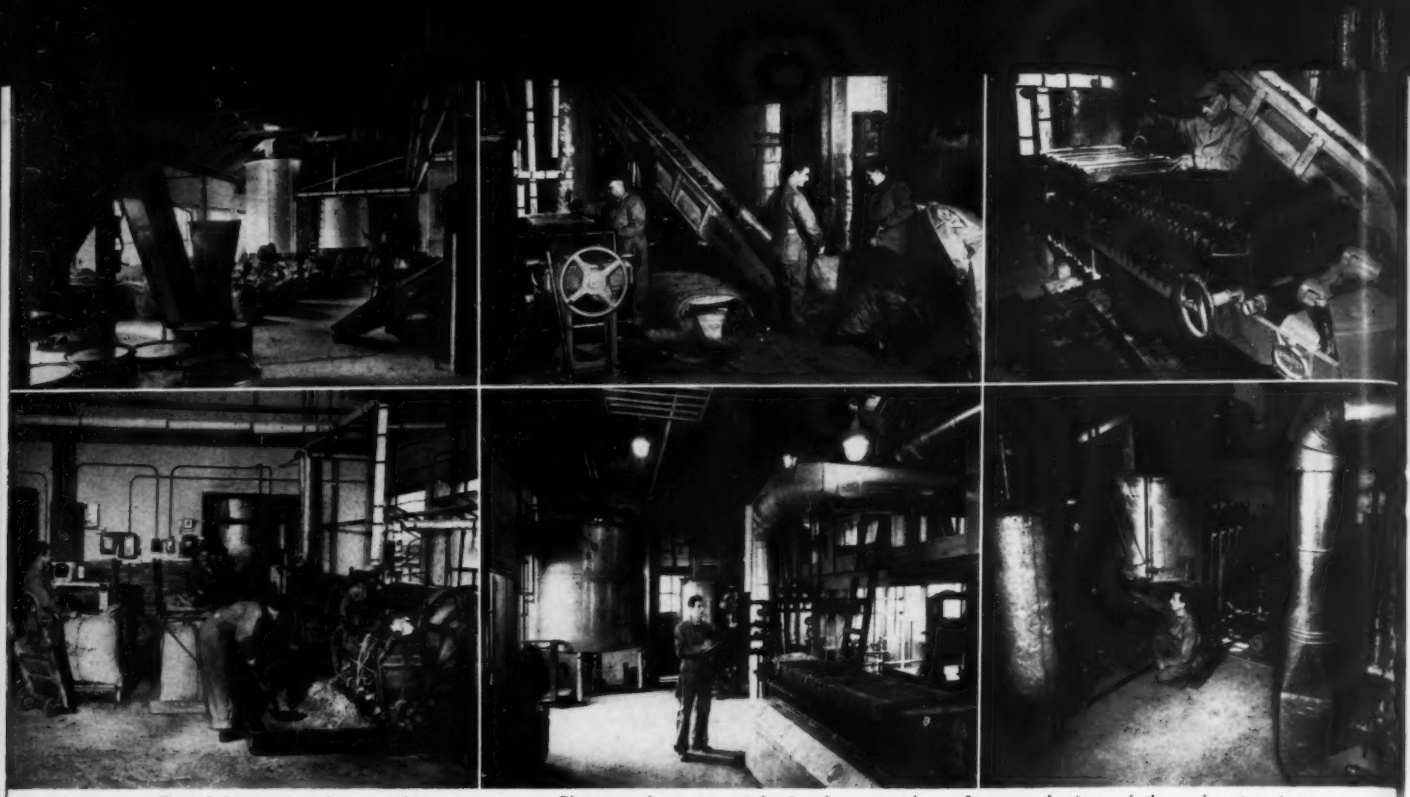
After the death of Manuel Argueso in 1930, his son Luis M. Argueso, Sr. took over the presidency of the company which he still heads, and directs the firm's activities. After finishing his education at the University of Notre Dame and service in the United States Navy in World War I in 1919, his work in all phases of the business and the experience and friendships gained in traveling in the United States, South America and Europe, and the intimate knowledge of consumer requirements, led to a natural desire to expand further in the field of vegetable and bees waxes.

During World War II, Argueso, representing all the wax producers of Mexico for the sale of candelilla throughout the world, was instrumental in making an agreement between the Unions of Producers of Candelilla Wax and government agencies to increase the production of candelilla to 5,000 tons yearly, obtaining such priority for boiling tanks, trucks, sulfuric acid, etc., as the producers required to augment their production.

In 1939, a laboratory and experimental pilot plant under the direction of Mr. C. S. Treacy, Ch. E., New York University 1915, Chemical Warfare Service World War I, now vice-president in charge of engineering and chemical research, was installed in Mt. Vernon, N. Y. to establish a research and engineering program for a modern wax refinery. As a result, the Mamaroneck Chemical Corporation was formed in 1941 as an affiliated company to refine and process not only candelilla, but also carnauba, ouricury and Leeswax.

From its present quarters a nation-wide service has been established with facilities to receive import cargoes at any port of entry in the United States. Imports can be processed by Mamaroneck and shipped to ultimate consumers in the U. S., Canada and Europe. Through its Laredo, Tex., branch office and its affiliate Mercantile Maco, S. A. of Saltillo, Mexico, fibers and waxes are imported and distributed from the latter country. Merchandising is direct to consumers from their main office, or through sales agents in some of the principal cities.

The production of candelilla in Mexico is mainly in the desert and high plateau regions of the States of Coahuila, Nuevo Leon,



Top, left is general view of the interior of Argueso's refining plant.

Filter press is being cleaned after filtering wax as shown in left foreground of photograph at top center. Crude wax is being loaded onto conveyor for delivery to melting tanks and filtration as shown in extreme right part of photograph.

Photograph at top right is close-up of cleaning filter press and loading operation in background at right.

After wax has been filtered it is passed to flaking machines where it is reduced to the required size, as shown in photograph at bottom, left.

A general view of the solvent extraction plant appears in bottom center photograph. Filter press shown in right foreground processes wax waste filtrate.

Another view of Argueso's new extraction installation (bottom, right) equipment for which was completely designed by the company's own engineers.

Wax Refinery (Continued)

Chihuahua, Durango and Zacatecas. The plant is a wild resource of these sections, the shrubs growing two to three feet high, the wax being found as a coating formed on the leafless stems of the plant. From 100 tons of Candelilla shrub, approximately two tons of wax are obtained. Shipment of the Union Standard Prime Quality can be made through Texas border points or via the seaport of Tampico, Mexico, to New York City and Europe.

Carnauba and ouricury waxes are quite a direct opposite in their type of growth. Their tall, stately, palms tower 25 to 40 feet in height and are prevalent in the semi-arid sections of the Brazilian northeastern states. Carnauba and ouricury are produced from the powder on the leaves which are cut and gathered by the natives. Approximately 25 leaves per tree yearly are cut which yield approximately ¼ lb. of wax. After what are usually primitive production methods inland, the wax is transported to the coastal ports where exporters sort and grade the materials. In the case of ouricury, production is in the area serviced by the port of Bahia. This wax is brought from upcountry in the form of powder, melted, and lumped. After some of the impurities are removed, it is then bagged for export by firms specializing in this work. However, carnauba wax is freighted from the interior to the ports of Bahia, Fortaleza and Parnahyba in lump form, and at these points is classified and graded and prepared for exportation. The principal grades of carnauba are #1 Yellow, #2 Yellow, Cauhype, Gorda Clara, #3 North Country and #3 Chalky, the bulk being #3 North Country.

These three waxes — candelilla, carnauba and ouricury — our main sources of vegetable waxes for industry, are the result of Nature's desire to protect the growth of the plant by sealing with wax the moisture within the plant leaf and stem structures. The soil and the varied climatic conditions encountered in these semitropical and extensive zones of origin, particularly in the arid regions, control the complex chemical compositions of these waxes, the rate of production of wax given off by each plant depending on these conditions.

Importer-Refiner

WITH shipping centers of these natural products 2500 to 5000 miles from industrial centers, M. Argueso's operations must anticipate buyers' requirements, importing at all times crude waxes for distribution and refining purposes to keep an even flow of materials moving into consumption. When Argueso's shipments arrive at New York City, or other ports of entry, they receive an inspection at the piers, are weighed, and transported to warehouses or their factory for refining. The crude waxes are graded following rigid laboratory tests as to purity, color, emulsifica-

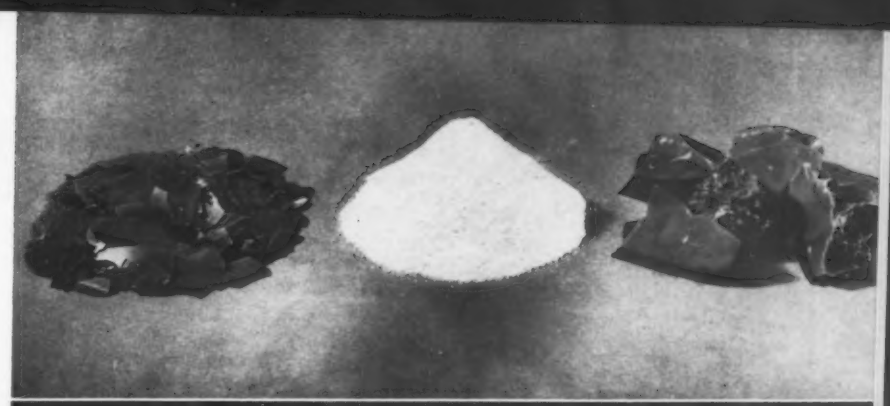
CAPTIONS: THIS PAGE

Three forms of wax shipped by Argueso include flake, powdered and lump, as shown in that order in photo at right.

After the wax has been refined, bagged and tagged it is placed in storage as shown in second photograph from top.

A close-up of the front and back views of the type of seals Argueso uses on all of its refined wax shipments.

Typical laboratory unit at the plant of M. Argueso & Co., Mamaroneck, N. Y., bottom, right. Here C. S. Treacy, vice-president in charge of engineering and chemical research, carries out tests on all crude and refined Argueso waxes.



tion properties, oil retention, solvent retention, gloss, and other such qualities as a client may desire. The refined vegetable waxes are sold under Argueso's trademark "Mamaroneck Refined Brand." Metal tamper-proof seals with this trademark are attached to all containers shipped.

To complement the sales of refined and crude waxes, creation of specialty waxes has been fostered, not only through the firm's own research laboratory, but also in close cooperation with customers' scientific programs; tailormade blends and synthetic waxes to fit specific purposes have been developed which are sold under the brand "Cerita Industrial Waxes," together with ceresins, ozokerites, palm waxes and resin wax blends.

M. Argueso's full line of waxes are shipped daily to the furniture, floor and automobile polish manufacturers; also to the carbon paper, inks, paint, paper impregnation, candle making, lubrication, cosmetic, leather finish, investment casting industries, candy, chewing gum and twine and cordage trades.

(*Turn to Page* 201)

THE *Aerosol Valve* FOR

YOUR PRODUCT *by Precision*

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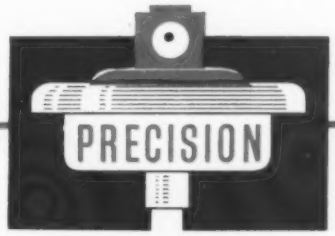

Precision Valve Corporation

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Solubility of GLASS AEROSOL

THE recently introduced glass aerosol package has undoubtedly derived its greatest appeal because of its capacity to produce a finely atomized cologne mist with a minimum of effort. These pressurized colognes are composed of four basic ingredients: perfume, alcohol, water, and propellent.

The amount of perfume oil in aerosol colognes is considerably less than in conventional cologne and toilet-water formulations. This serves to counteract the intensified odor of perfumes dispensed as an aerosol mist. The concentration of oil is usually only one or two percent of the total mixture.

By contrast, the amount of alcohol, water, and propellent may vary widely. Many oils have been shown to dissolve completely in various propellents without the solubilizing assistance of alcohol. These compositions produce a very dry, fine spray. However, in view of the long association of alcohol with perfumes it is desirable to add this ingredient to aerosol colognes in order to achieve a more comparable fragrance.

The inclusion of excessive amounts of alcohol produces a very wet spray and a condition known as streaming. Where anhydrous alcohol is used, the usual propellents may be fortified with a small amount of high pressure propellent to improve the spray without unduly increasing the pressure. Aerosols having an alcohol content greater than about 65 percent by weight rarely give satisfactory sprays.

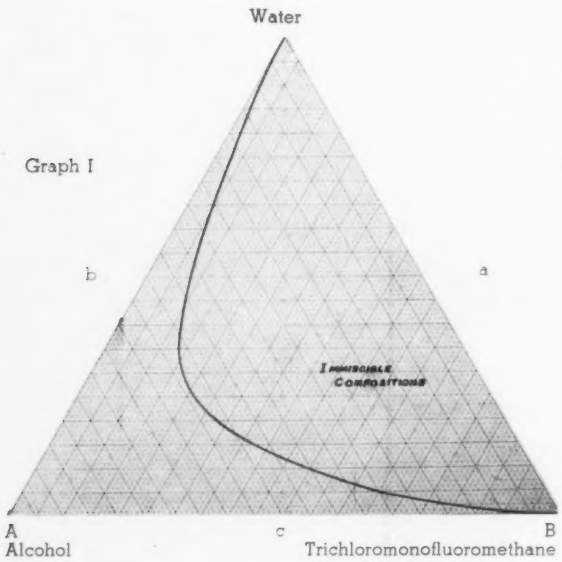
The presence of water in alcohol is well known. The usual product carries four to five percent water, while the anhydrous grade still contains some water and is also hygroscopic. Substantial amounts of water are often added to conventional colognes.

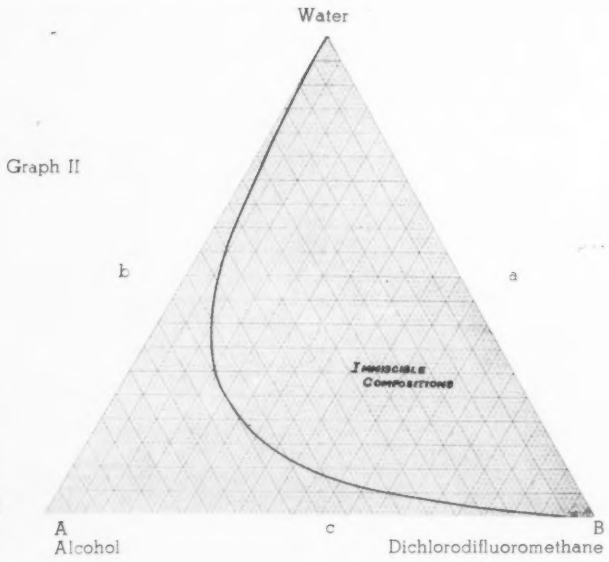
Water is essentially insoluble in the usual glass aerosol propellents and quickly rises from a mechanical mixture to form a separate upper layer. The addition of sufficient alcohol causes the two layers to coalesce and form a true solution. The amount of alcohol that must be added to accomplish this result is a function of the amount of water and propellent, the type of propellent, and the temperature. By restricting the temperature to some invariant value it is then possible to determine just which compositions of alcohol, water, and a given propellent form true solutions and which do not.

The effect of perfume oils on the solubility of alcohol and water in propellents is almost negligible; particularly for the low concentrations of oil that are used. The oil usually acts as a diluent.

Solubility information has been worked out for mixtures of alcohol and water with five pure propellents and for one mixed propellent. The determinations were made at a temperature of 70°F. The results have been plotted on three coordinate paper for easy evaluation. In each case the curve represents the boundary between those compositions that produce true solutions at 70°F. and those that do not.

The propellents have been





Compositions

By Montfort A. Johnsen
Continental Filling Corp.

selected as those most feasible for use in glass aerosol products. It is recognized that most of these cannot be used alone, but must be modified by the addition of a second propellent. The solubility of alcohol and water in such mixtures then becomes an approximate average of that in the pure propellents alone. This is demonstrated in Graph VI.

The order of presentation is now given, along with reference information:

Graph	Compound	Formula	B.P. (°F.)	P (°70F)
I	Trichloromonofluoromethane[1]	CCl_3F	74.7	——
II	Dichlorodifluoromethane[2]	CCl_2F_2	-21.7	70.5 psig
III	Dichloromonofluoromethane[3]	$CHCl_2F$	48.0	8.5
IV	sym. Dichlorotetrafluoroethane[4]	$C_2Cl_2F_4$	38.4	13.3
V	1,1,2-Trichloro-trifluoroethane[5]	$C_2Cl_3F_3$	117.6	——
VI	50% trichloromonofluoromethane 50% dichlorodifluoromethane*		3.5	35.5

*Portions of Graphs I and II are included for reference.

(1) Freon-11 or Genetron-11—Freons manufactured by E. I. du Pont de Nemours & Co. and Genetrons by the General Chemical Division of Allied Chemical and Dye Corporation.
(2) Freon-12 or Genetron-12
(3) Freon-21
(4) Freon-114 or Genetron-316
(5) Freon-113 or Genetron-226

The most convenient method for conducting solubility tests is by progressive addition of solvent to a two-phase solution in a glass aerosol bottle. This may be accomplished by means of a hypodermic syringe if the bottle is sealed with a special hermetic rubber sealing device of the type marketed in connection with injection-type medicinal preparations.

It has been found best to place from five to 10 grams of propellent in glass, allowing enough evaporation to remove the air, then sealing. For accuracy, the weight of liquid propellent is obtained by subtracting the difference in weight between the portion of propellent in the gas phase and the weight of air occupying the same volume from the overall net weight figure. The correction is quite important for high pressure propellents. This can be demonstrated with a sample computation shown on page 173.

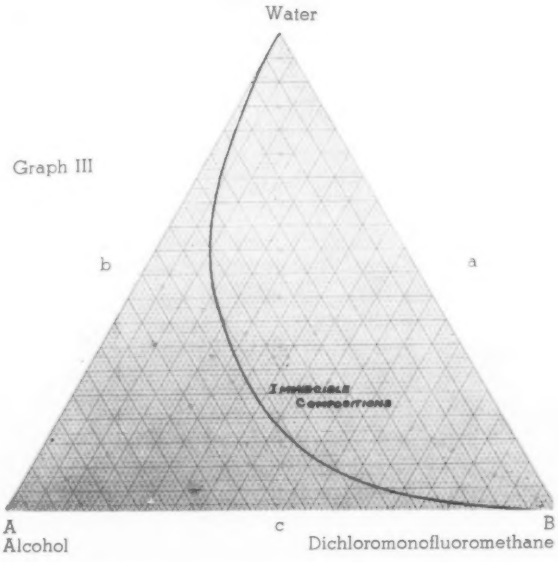
If the volume of head space is changed considerably by the addition of alcohol and water to the system, a series of corrections are necessary.

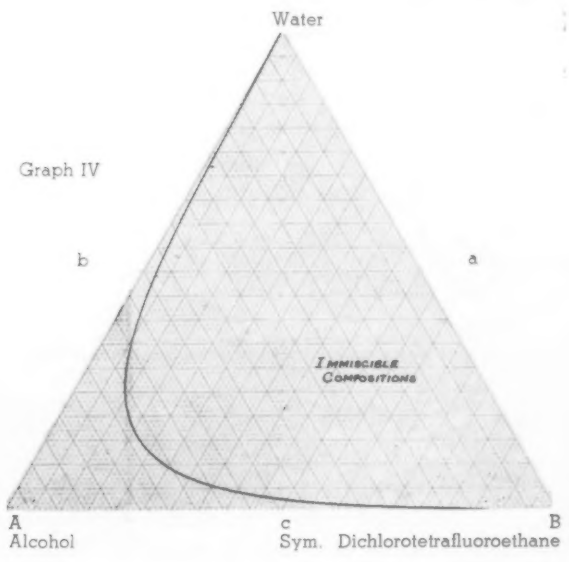
Because a condition of saturation is maintained at each reading the vapor pressure of propellent may be considered as constant.

In practice, a small amount of water is added to the propellent using a tuberculin syringe. Sufficient alcohol is then introduced to dissolve the water, and the process is repeated. Larger increments are added as the volume is increased.

The 1.0 ml. tuberculin syringe was selected because the slim plunger minimized the back pressure effect of the propellent, at the same time giving a minimum of peripheral leakage under that pressure. One syringe is suggested for the alcohol and another for the water, to eliminate drainage intermixing. The cylinder should be air-free during additions.

(*Turn to Page* 173)





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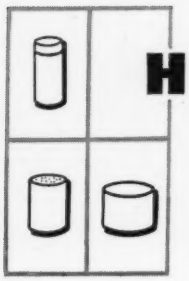

HARCORD

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New York Telephone BArclay 7-5685

Sample Computation

5.0 gm = Overall net weight of dichlorodifluoromethane, and
100 ml = Volume of enclosed gas,

$$\text{Then, Vapor Wt.}_{\text{Propellent}} = \text{M.W.} \times P_{atm.} \times \frac{t^\circ}{t} \times \frac{\text{Vol.}}{\text{Mol. Vol.}}$$

$$= 121 \times 5.8 \times \frac{459}{529} \times \frac{100}{22{,}400}$$

$$= 2.72 \text{ grams.}$$

While the weight of displaced air is given by:

$$\text{Weight}_{\text{Air}} = \text{Av. M.W.} \times \frac{t^\circ}{t} \times \frac{\text{Vol.}}{\text{Mol. Vol.}}$$

$$= 0.11 \text{ gram}$$

The weight of liquid then becomes

$$= \text{Net Wt.} - (\text{Vapor Wt.}_{\text{Propellent}} - \text{Weight}_{\text{Displaced air}})$$

Or:

$$\text{Wt.}_{\text{Liquid}} = 5.00 - (2.72 - 0.11)$$

$$= 2.39 \text{ grams.}$$

Glass Aerosols

(*From Page* 169)

The exact point at which miscibility is attained is very difficult to determine for systems low in propellent. For this reason, and through unavoidable errors in the procedure, the estimated maximum error for certain compositions is about two percent.

The solubility relationships demonstrated in the accompanying graphs are predictable by theory. Water can be considered as composed of planar super-molecules of $(H_2O)x$ complexity which are loosely connected by Van der Waal's forces. The value of x is larger at low temperatures. To be soluble in water, a substance must be composed of molecules small enough to fit into this lattice type structure. In certain cases a larger molecule, electronically unbalanced, may induce sufficient distortion of the electrical hydrogen-bridge forces between individual H_2O entities to compel solubility.

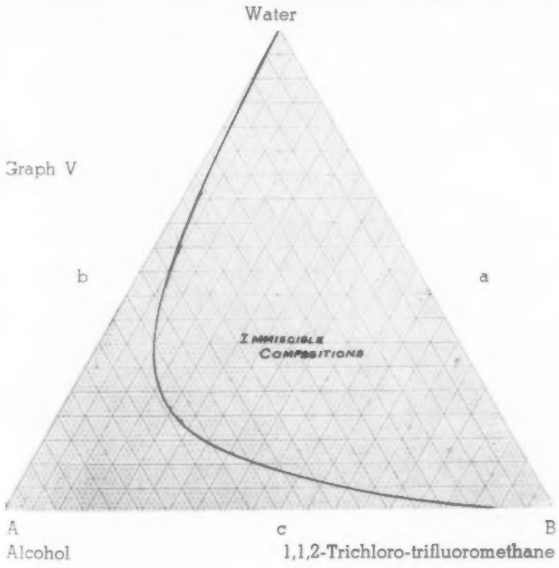
None of the propellents tested are small enough or polar enough to be appreciably soluble in water alone. But by the addition of alcohol as a cosolvent, the basic lattice structure of water is weakened by dilution until certain amounts of propellent can be tolerated.

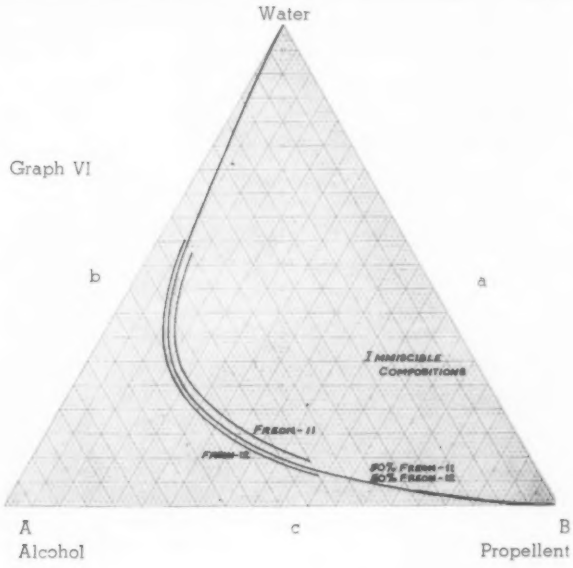
Dichloromonofluoromethane, $CHCl_2F$, is the smallest and most polar of these propellents. It is expected to be relatively soluble and this is found to be so.

Although dichlorodifluoromethane, CCl_2F_2, is a neutral molecule, the plurality of fluorine and incumbent ionization shrinkage cause it to be more water soluble than the corresponding trichloromonofluoromethane, CCl_3F, although the latter is slightly polar.

In the case of non-polar sym. dichlorotetrafluoroethane CCl_2F_4, and the slightly larger, more polar compound, 1,1,2-trichloro-trifluoroethane, $CCl_2F \cdot CF_2Cl$, the molecular size becomes highly restrictive for water solubility, and is therefore drowned out by the polar effect. Thus the latter is more soluble.

While it cannot be said that the graphic information presented here can be used without modification in the compounding of aerosol colognes—since the solubility of perfume must be considered—it will serve as the basis for the limitation of water in such products.





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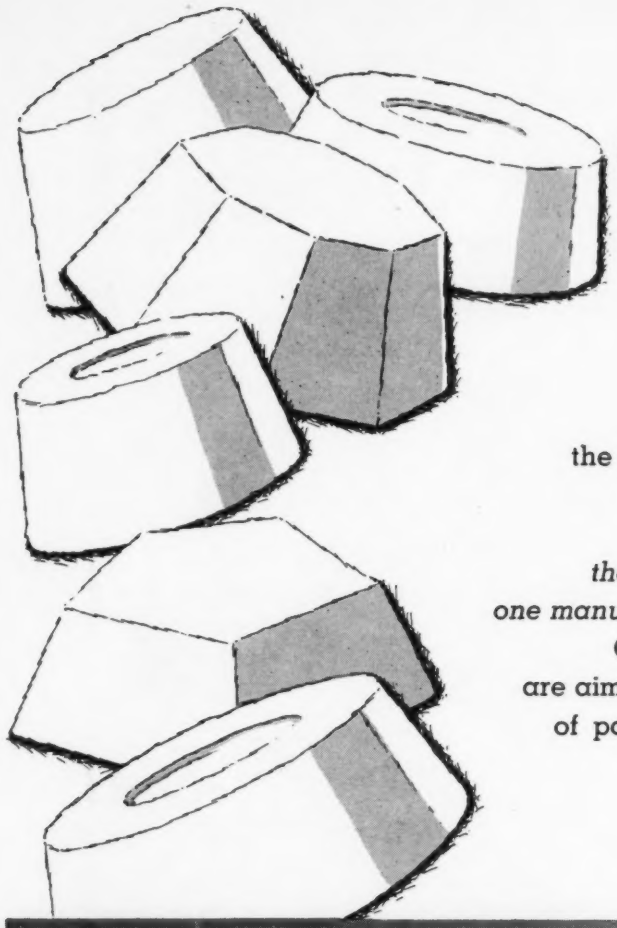

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Fly Control on Dairy Farms

Resistance to insecticides less important as fly control factor than poor sanitation

By Robert J. Dicke,
University of Wisconsin

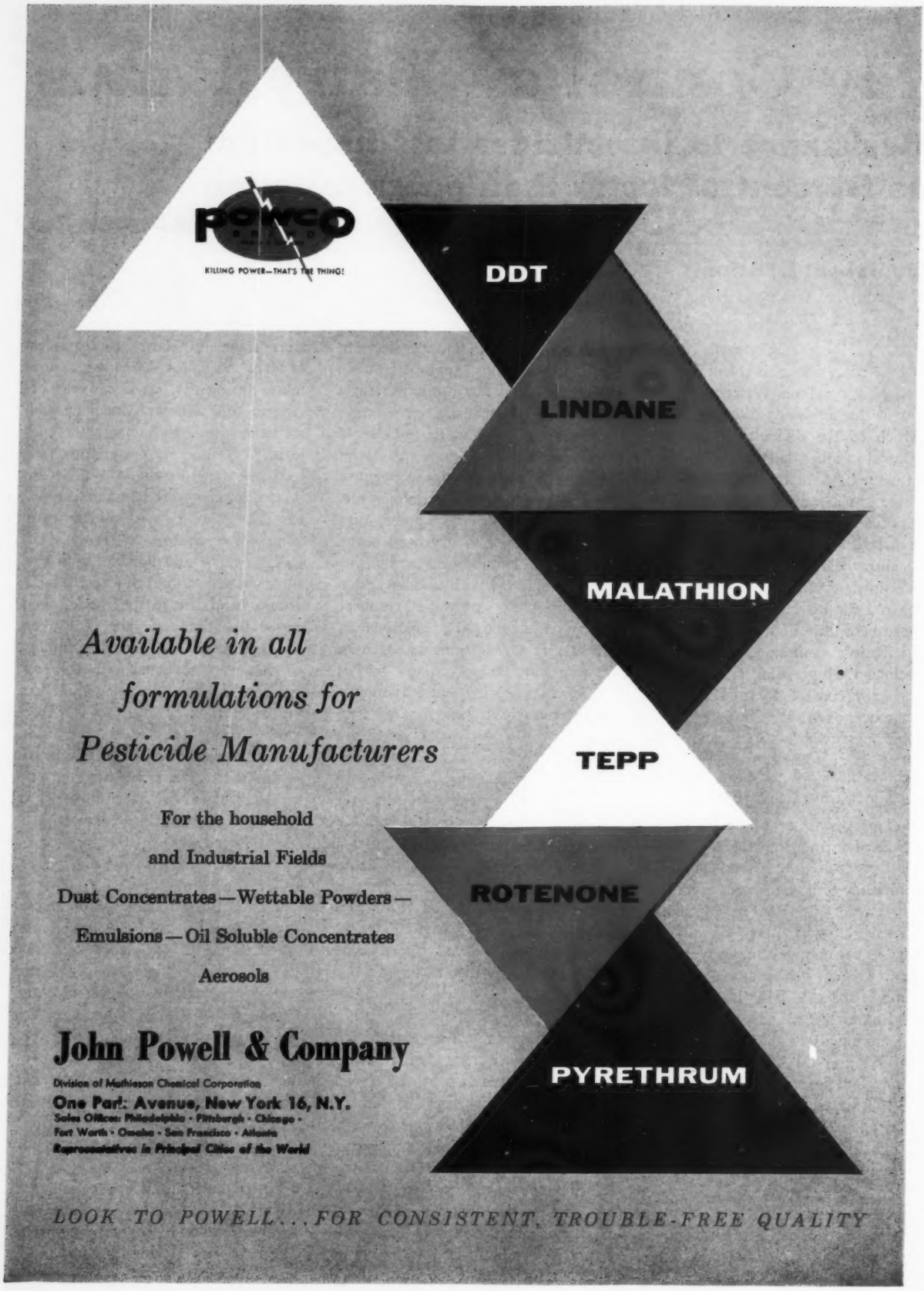
THE common housefly has become increasingly difficult to control on Wisconsin dairy farms during the past several years. Much of the difficulty in housefly control in other dairy areas has been attributed to insecticide failure, or more specifically to an acquired resistance in houseflies to chlorinated hydrocarbon insecticides such as methoxychlor and lindane. On Wisconsin dairy farms, however, it appeared that insecticide failure was of relatively little importance; whereas ineffective sanitation (reduction of principal fly breeding sites) was the primary control fault. During the summer of 1953, 29 dairy farms were observed in three areas of the state in an effort to determine the degree of housefly control and the primary cause of control failures.

Test farms were selected on the basis of farmer interest in a fly control program rather than by size or efficiency of management. One farm (0-5 refer to table) employed loose housing management; on all other farms the mature animals were stanchioned and young stock were held in box stalls. Milking herds on these farms averaged 22 cows, with the exception of two farms with herds of 45 and 60 milking cows (R-2 and 0-1, respectively). On farm 0-1, four separate barns housed the dairy herd, general stock, dairy yearlings, and hogs. Twenty-seven barns were sprayed with a water suspension spray containing 2.5 percent methoxychlor. Of these, five had been sprayed by a commercial operator with an insecticide paint containing approximately 0.3 percent lindane about one month previous to the methoxychlor application. No insecticide was used on one farm (R-9), and four dairy barns were sprayed by farmers with either a methoxychlor or lindane insecticide or both at an unknown concentration. A two percent malathion water suspension spray was applied during late summer to overhead beams and fixtures on four farms previously sprayed with methoxychlor. Pyrethrum as a water emulsion spray was employed at unknown intervals on seven farms as a general space spray.

Farms were inspected at monthly intervals from June through September. The dairy barns, yards, and all sheds housing animals were examined thoroughly for active fly breeding. Poor sanitation was indicated where manure was not removed from stock pens or yard at weekly intervals and where extensive fly breeding was encountered throughout the summer. Fair sanitation was indicated where extensive breeding occurred only sporadically. Fly populations were sampled by taking six sweeps with a net over an area where populations were at their maximum concentration. The following arbitrary limitations to describe degree of control were employed: "satisfactory control", an average of 0-2 flies per sweep"; "fair control", 3-9 flies per average sweep; and "failure", 10 or more flies per average sweep.

The relative tolerance of flies (resistance or susceptibility) to methoxychlor and lindane was determined on all farms where fly populations were sufficiently large for samples of 50 or more flies. All samples were taken during the last two weeks of August, and tests were made at field stations within 19 hours after collecting. Temperatures at time of testing ranged from 74° - 78° F. Three samples were taken in a series at each farm, two of which were used for exposure to residues of methoxychlor and lindane, with the third sample serving as an untreated check. Mortality in the checks averaged less than one per cent over an eight hour test period. Samples of flies were collected with a sweep net and confined in one-gallon ice cream cartons covered with cheese cloth. Flies were fed diluted milk contained in a shallow dish placed within the carton. Exposure to insecticide residues was accomplished by cutting the cheesecloth cover with a razor blade and inserting a previously treated strip of blotting paper 10 by 3 inches. These strips were cut from large sheets previously sprayed on one side with insecticide by means of a compressed air sprayer. Water suspension insecticides were applied to the blotting paper at a rate of approximately one gallon per thousand square feet and at a concentration of 2.5 percent methoxychlor and 0.5 percent lindane. Residues did not exceed one week in age, and clean cartons and new blotter strips were used for each culture.

Moribund flies were counted at intervals of 15 and 30 minutes, and one, two and eight hours. The amount of moribundity at each time interval was recorded as a per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cent of the total population. The per cent moribundity did not increase uniformly at the successive observation periods. The differences in moribundity between each time interval were obtained and weighted by a geometric progression factor. By this method, the insecticidal effect at the 15 and 30 minute intervals was accentuated over the longer exposure intervals where the accumulated effect became progressively more uniform. Since a true reference strain of flies was impossible to obtain, a mean of the weighted averages was used as a basis for comparison. The weighted mean per cent moribundity was 30 for methoxychlor and 25 for lindane. Results which were either 10 above or below this mean were arbitrarily considered neutral in effect (0), between 10 and 20 above or below the mean as susceptible (S) or resistant (R), and above or below 20 as extremely susceptible (S+) or resistant (R+). All treatments and results are tabulated in the accompanying summary.

Satisfactory control of the common housefly was obtained on 15 farms, fair control on six

(*Turn to Page* 183)

Summary of 1953 fly control results on 29 Wisconsin dairy farms

Farm[1]	Insecticide treatment[2]	Relative tolerance of flies to insecticides[3]		Hog yard	Sanitation	Results
		Methoxychlor	Lindane			
O-1 Barns:						
Dairy	Meth—June, Aug. Mal—Sept.	—	—	Yes	good	satisfactory
Stock	L—June Meth—July, Aug.	O	R		good	satisfactory
Heifer	L—June Meth—July, Aug.	—	—		good	fair
Hog	Meth—June P	O	R		poor (general) poor (hog yard)	failure
O-2	Meth—May Mal—Aug. L-Sept.	S	O	Yes	fair (box stalls)	failure
O-4	Meth—June, Aug.	O	O	No	fair (box stalls) and stock yards)	fair
O-5	Meth—July	O	O	No	poor (stock barn)	failure
O-6	L—June Meth—July	O	R	No	poor (box stalls)	failure
O-7	Meth—Aug	O	R	No	good	satisfactory
O-8	Meth—July Mal—Aug. P	O	R+	No	fair (barn yard)	fair
O-9	Meth—July Mal—Aug.	O	R	No	poor (box stalls)	failure
O-10	L—July Meth—Aug. P	S+	O	Yes	poor (pig yard) good (dairy barn)	satisfactory
R-1	Meth—June P	O	O	No	good	satisfactory
R-2	Meth—June	O	O	No	fair (box stalls)	fair
R-3	*L—Aug.	S	O	No	good	satisfactory
R-4	Meth—June	R	S+	No	good (dairy barn) fair (stock barn)	satisfactory
R-5	Meth—July	R+	S	No	fair (box stalls)	fair
R-6	Meth—June	S	S	Yes	fair (hog pen)	fair
R-7	Meth—July	—	—	No	good	satisfactory
R-8	*Meth—Aug.	S	O	No	good (dairy barn) fair (stock barn)	satisfactory
R-9	None	O	O	No	good	satisfactory
R-10	Meth—July	R+	O	No	good	satisfactory
W-2	Meth—June P	—	—	No	good	satisfactory
W-3	L—May Meth—June	—	—	Yes	good	satisfactory
W-4	Meth—June	—	—	No	good	satisfactory
W-6	Meth—June	S	O	Yes	good (poor temporarily around outside feed bunker)	satisfactory
W-7	Meth—June	—	—	No	good	satisfactory
W-8	Meth—June	O	S	No	poor (stock pen)	fair
W-9	Meth—June P	—	—	No	good	satisfactory
W-10	Meth—July, Aug. P	R+	S+	No	poor (box stalls)	failure
W-11	*Meth—June	S	S+	No	poor (general) turkey yards)	failure
W-12	*Meth—June *L—July	S	O	No	poor (box stalls)	failure

1 O=Outagamie County; R=Rusk County; W=Washburn County.
2 L=0.3% lindane as a water paint; Meth=2.5% methoxychlor water suspension; Mal=2% malathion water suspension; P=pyrethrum; *=application by farmers, concentration unknown.
3 O=average tolerance; S=relatively susceptible; R=relatively resistant; +=very susceptible or resistant.

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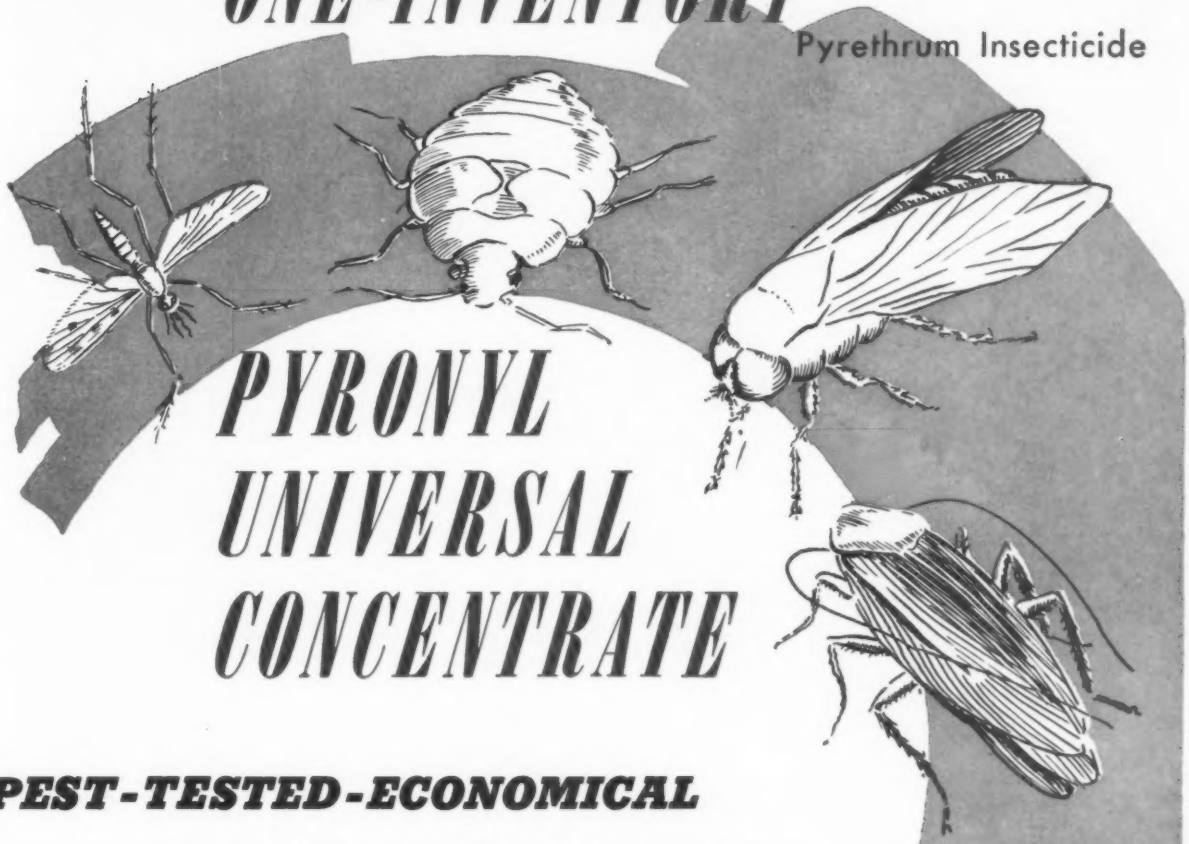

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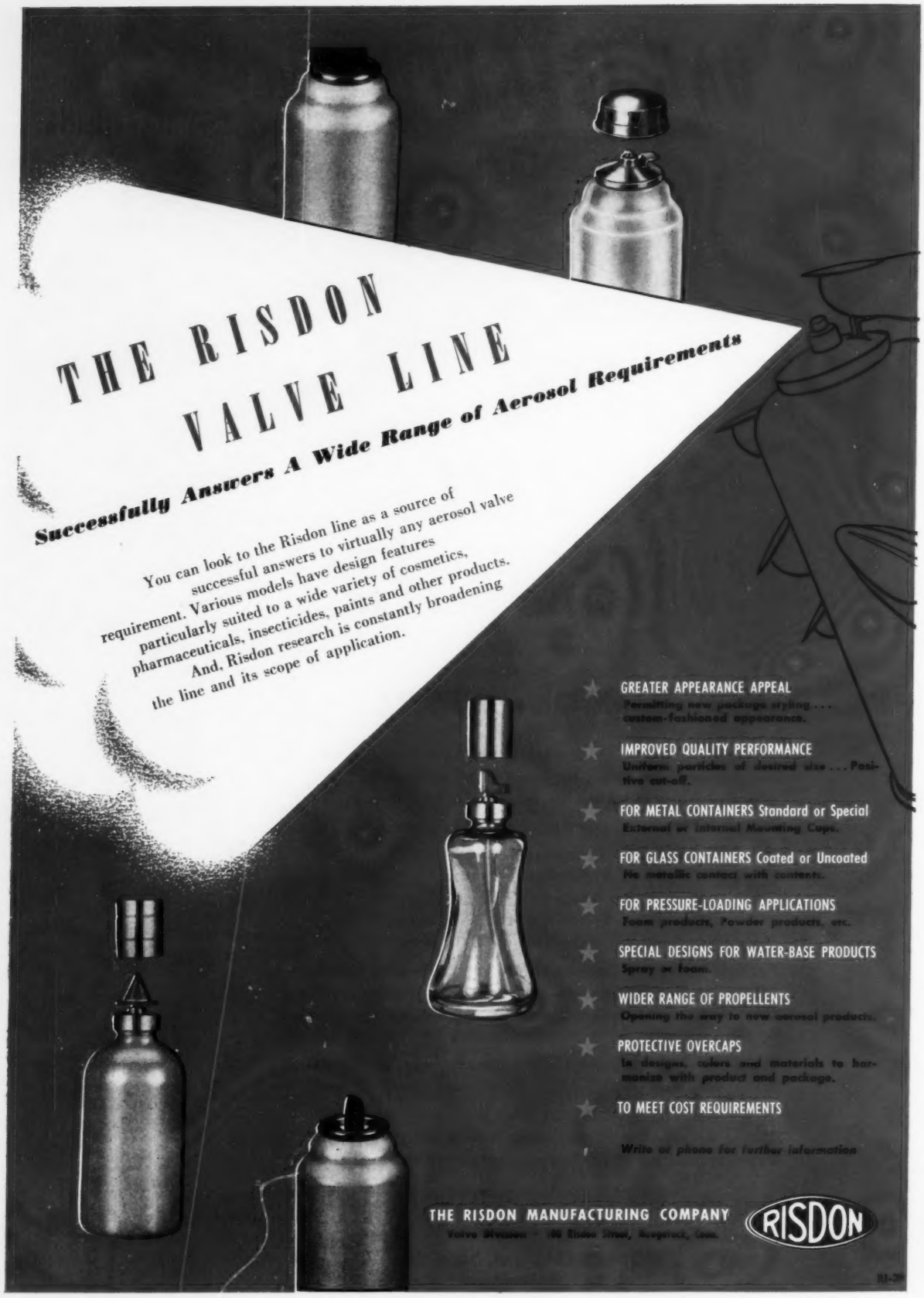
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Fly Control

(*From Page* 179)

farms, and failure on seven farms. Sanitation was poor on all farms where control failures occurred. On all of the farms where fair control was obtained, sanitation was also inadequate. Where satisfactory control was obtained the general sanitation on 13 farms was adequate to suppress extensive fly breeding. Satisfactory control was obtained on two farms where sanitation was considered only fair, and on one farm in spite of poor sanitation in an adjacent pig yard. On farm 0-1, fair control was obtained in the heifer barn, and satisfactory control in the dairy and stock barns although these areas were open to fly invasion from a hog barn where extensive breeding occurred.

The relative tolerances of fly strains tested were variable. Resistance to methoxychlor for example did not necessarily indicate a comparable resistance to lindane (R-4, R-5, R-10, and W-10). More fly strains were resistant to lindane (six strains) although there were fewer previous exposures to this insecticide than to methoxychlor. On the seven farms where failures occurred, only one strain was very resistant to methoxychlor while three were neutral in their response and three were susceptible. Where satisfactory control was obtained, three strains were neutral in response to methoxy hlor, three susceptible, one very susceptible, one resistant and one very resistant. For the six farms obtaining fair control, four were neutral, one was susceptible, and one very resistant. On farm 0-1, flies were neutral in response to methoxychlor and resistant to lindane.

Pig yards are generally a site of serious fly breeding. On farms where pig yards were adjacent to the dairy barn, however, satisfactory control was obtained on three farms, fair control on one farm and failure on one farm. On farm 0-1 extensive fly breeding occurred in the pig yard, although satisfactory control was obtained in the dairy and stock barns, and fair control in the heifer barn. The principal breeding site on farms where failure or only fair results were obtained occurred within the dairy barn in box stalls or pens confining bulls or yearling dairy animals.

Discussion:

THERE appeared to be no correlation between the degree of fly control obtained and the relative tolerance of flies for methoxychlor. Satisfactory control was obtained on two farms where fly strains were relatively resistant to methoxychlor, and failed on three farms where flies were relatively susceptible to the insecticide. Where extremely resistant fly strains occurred, one each was taken from farms with satisfactory control (R-10), fair control (R-5) and failure (W-10).

A definite correlation was evident between the degree of sanitation management and the degree of house fly control obtained. Wherever failures occurred, general sanitation was poor; and where only fair control was obtained, sanitation was also inadequate. On 80 percent of the farms where satisfactory control was obtained, sanitation management was adequate for suppression of extensive fly breeding. A strain of flies extremely susceptible to methoxychlor residues on farm 0-10 may have accounted for the satisfactory control obtained in spite of poor sanitation in an adjacent hog yard. Sanitation within the dairy barn, however, was excellent. On the two farms (R-4 and R-8) where satisfactory control was obtained, but fair sanitation was indicated, conditions in the dairy barns were excellent while general sanitation was fair in adjacent stock barns. Extensive fly breeding, however, was not observed in these barns. On one farm (R-9) satisfactory control was obtained without insecticide application. On farm R-3 the only insecticide used was an application of lindane late in the summer to overhead beams and fixtures. Sanitation on this farm was excellent. Two applications of methoxychlor and one of malathion were required for adequate control in the dairy barn of farm 0-1. Methoxychlor and repeated applications of a pyrethrum space spray, however, were unable to control flies in the hog barn where extensive breeding was observed.

Previous laboratory and field experiments have demonstrated that the insecticides employed in this study were effective for the control of houseflies which have not acquired an immunity to chlorinated insecticides. The tolerance studies reported would indicate that after two or more years of exposure to chlorinated insecticides, fly strains in the areas studied had not acquired a marked degree of resistance to them. A correlation between relative resistance and degree of control was not indicated. It is definitely indicated from these observations that effective fly control cannot be obtained with insecticide applications alone, and that adequate sanitation management is mandatory for an effective control program.

On Wisconsin dairy farms, the principal sanitation fault on all but three farms where inadequate control was obtained was attributed to excessive fly breeding in box stalls confining to a small area yearling heifers and other stock. Manure accumulations in box stalls or pens are optimum breeding sites for the common housefly. Observations during this and previous field studies have indicated that weekly removal of manure from these areas has been more effectve in fly control than repeated applications of residual or space spray insecticides.

Summary:

1. Housefly resistance to methoxychlor did not appear to be an important cause for control failure on Wisconsin dairy farms.

2. Effective housefly control was not obtained with insecticide applications alone.

3. Adequate sanitation management appeared to be mandatory for an effective housefly control program.

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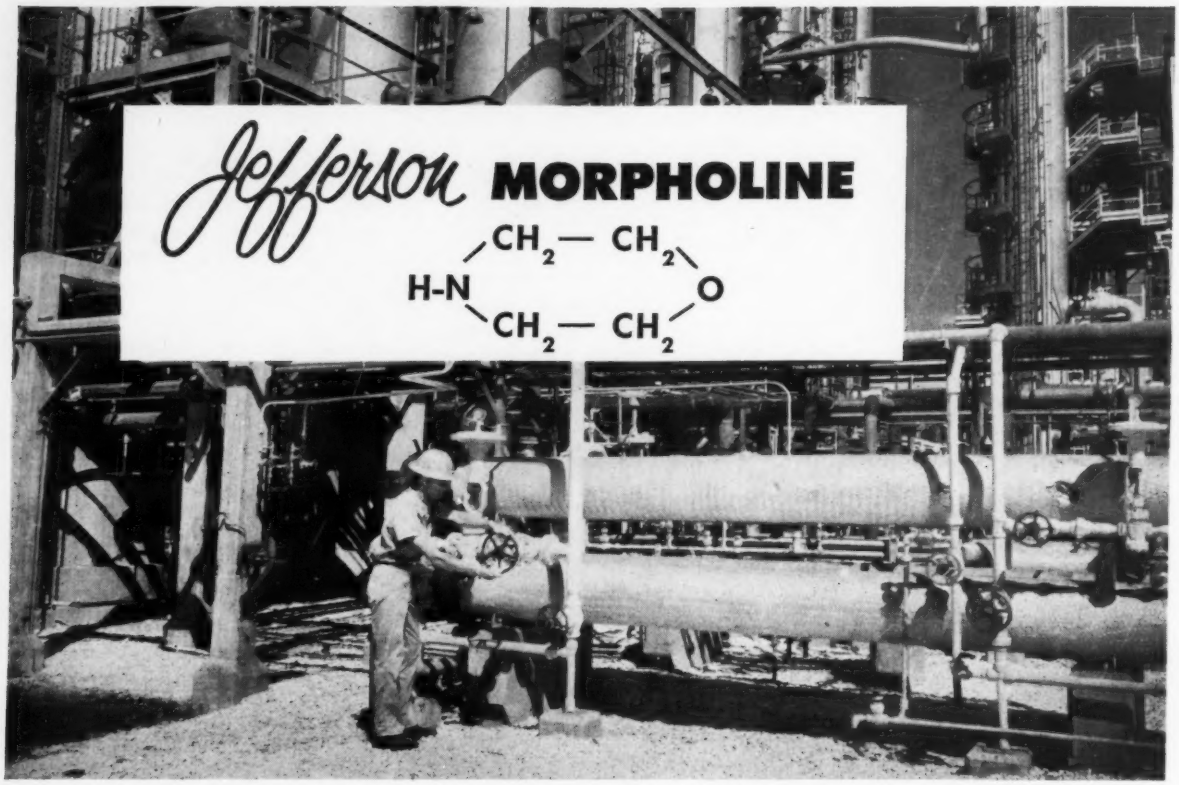

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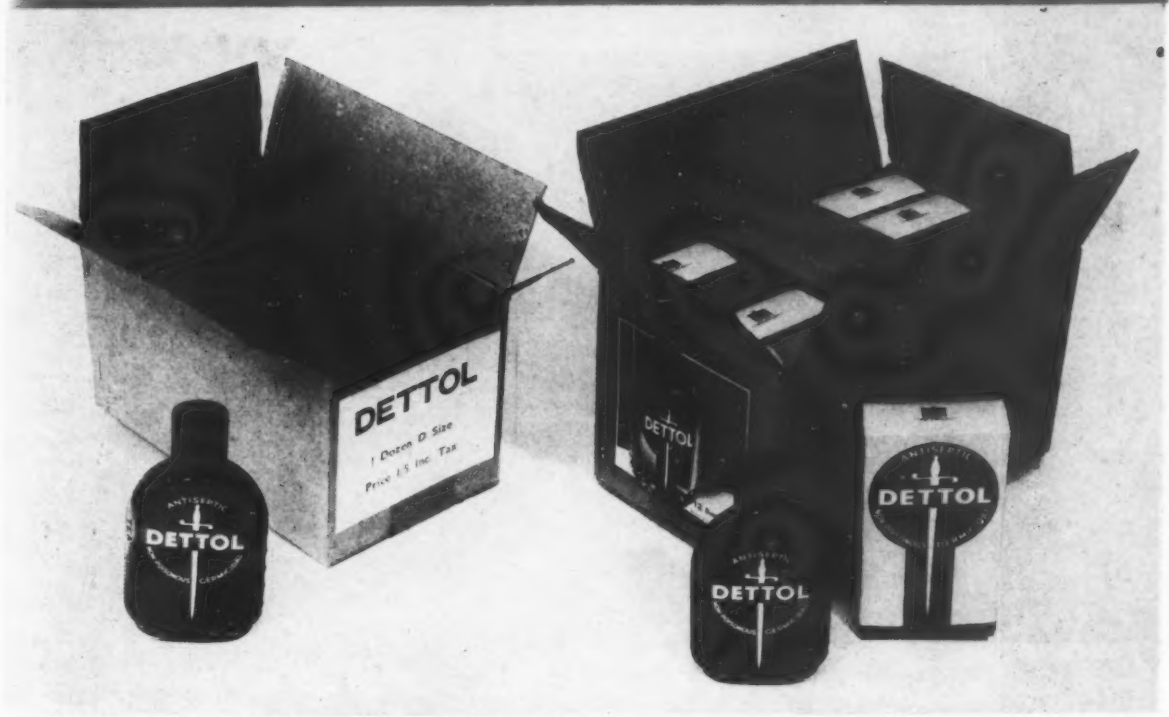

"Dettol" antiseptic, a chlorinated xylenol-terpineol type product made in Britain, is one the best selling preparations of its kind in the world.

IN a previous contribution to this journal, one of us divided "Antiseptics and Disinfectants as formulated for the British Market" into six main groups.[1] The paper in question was written seven years ago, and the lapse of time since then has only served to confirm the remarkable popularity of one in particular of these groups—a popularity that extends to most of the European countries, to the African continent and to the Far East. In view of this widespread consumer acceptance, we consider that some practical notes on the formulation and manufacture of antiseptics of this type would be of interest to the American manufacturer.

We do not propose to enter into details of evaluation tests or standardizations. In any case, the U.K. still lags behind the U.S.A. in respect to compulsory conformation with reasonably significant standard tests, though there is little doubt that this state of affairs will soon be ameliorated. From a study of the N.A.I.D.M.* Specifications for Insecticides and Disinfectants (as published in the *Soap Blue Book*) it is apparent that the National Association's Specifications C and D could well serve to cover different versions of this popular British type of personal and household antiseptic, based on chlorinated phenols.

The popular British type of antiseptic has much to commend it: clear, sparkling appearance; pleasant odor; stability; good germicidal properties; non-toxicity; non-irritancy; non-staining properties; versatility and ease of use. Being basically simple, it is capable of being modified within reasonably wide limits. It is also comparatively inexpensive. As will be seen later, it may be used in certain cases in its concentrated form and, on dilution, is suitable for first-aid treatment, dandruff treatment, gargling, bathing and personal hygiene, floor washing and spraying, etc. Its special interest, however, lies in its safety and efficacy for personal use.

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Some approximate analyses for this type of antiseptic fluid are given in Table I below. The writers are responsible for items A, B and C, while the remaining three analyses were undertaken by G. V. James, M.B.E., MSc., Ph.D., well-known British analyst and consultant[2] (See Table 2). It will be seen that the finished preparation consists essentially of an active chlorinated phenol germicide solubilized in water by means of a suitable emulsifying agent. As the selection and balance of these materials are both of fundamental importance, we shall deal with each group separately before suggesting a typical, workable formula.

Table 1
Some Approximate Analyses of Chlorphenolic Germicides

Constituents	Product A	B	C	D	E	F
Chlorophenols	4.5	2	3	4	4	3
Phenols	—	—	—	—	—	2
Emulsifying Agent	9	6	7	10	10	12
Terpineol	9	2	5	2	2	2
Other Perfumes	2	1.5	2	1	2	5
Alcohol	10	2	5	—	2	—
Water, to make	100	100	100	100	100	100

Germicide Types

GERMICIDES must be effective, non-toxic and virtually non-irritant in use. The most widely sold popular antiseptic in the U.K. contains, as announced on its label, 4.8 per cent chloroxylenol. Parachlormetaxylenol or P.C.M.X., a white crystalline powder with a characteristic odor, is very sparingly soluble in water (about 0.03 grm. in 100 c.c at 20° C.) but very soluble in alcohol and terpenes, and also soluble in soap solutions. In general, the closely related parachlormetacresol exhibits lower bactericidal properties and is therefore not so widely used for this purpose as the chloroxylenol. Another active member of this group is chlorcarvacrol, while the claims of D.C.M.X. or 2:4 dichlorosym.m-xylenol must also be taken into consideration. Probably the most widely used of these germicides, apart from P.C.M.X., are various proprietary mixtures resulting from the controlled chlorination of xylenols and comprising parachlormetaxylenol, its isomers, and frequently a proportion of dichlorxylenols: each manufacturer standardizing his products within narrow limits. These chlorinated phenols come on the market as white or off-white crystalline powders or straw to brown colored liquids.

Without going into details of bactericidal assay, we would point out that the foregoing agents as a group are more effective against *B. typhosus* than against *staphylococci* and *streptococci*. For this reason they are sometimes blended with other active agents: blending, in fact, may either widen the range of activity against a more comprehensive group of bacteria, or it may synergistically increase the activity towards one particular species. Thus octyl cresol, carvacrol and the so-called "Spanish hop oil" (which is not a genuine oil from *Humulus lupulus*) are all very useful bactericides against *Staphylococcus aureus*, and are therefore sometimes used in conjunction with the chlorinated phenols. Substituted phenols of interest in this type of antiseptic include amyl, butyl, benzyl and octyl cresols. Due attention should also be paid to thymol, isothymol, carvacrol, and sodium orthophenylphenate. The chlorphenols themselves are considerably less toxic and more effective as bactericides than the corresponding parent phenols, but halogenation decreases their solubility in water and involves a greater loss of efficiency in the presence of organic matter. The latter defect, however, is largely compensated for by their non-caustic and relatively non-irritant character, which allows them to be used on open wounds in concentrations of five per cent.[3]

While on this subject of germicidal activity, we feel that the utility in this respect of many perfumery materials is worthy of reiterated emphasis. The most popular British preparation of this type does, in fact, record two "active constituents" on its label; namely chloroxylenol and terpineol, the latter playing a dual part as perfuming agent and auxiliary germicide. (Terpineol is also employed to promote solubilization and clarity and, though not an essential constituent, is nevertheless a desirable and most useful one.)

Among the essential oils one immediately notes the pine oils, because of their world-wide use in disinfectants of all kinds. As James and others have pointed out, however, these oils exhibit marked variation in point of bactericidal and bacteriostatic properties, according to their origin and constitution. Much interesting data concerning the activity of Australian tea-

Table 2
pH of Some Commercial Chlorphenolic Germicides*

Example	Undiluted Original	Diluted: 10 times	20 times
A	8.3	7.6	7.5
B	9.7	7.8	7.5
C	9.6	7.8	7.6
D	11.6	9.2	9.0
E	11.4	8.7	8.4

* After G.V. James (Ref. No. 2)

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Table 3
Depressing Effect of Alcohol on Bactericidal Efficiency†

1 g. of lemongrass oil and 1 g. of potassium oleate, plus the following:			Rideal-Walker Coefficient	Duration of Stability in Days
	Ethyl Alcohol	Water		
(1)	48	50	3	1
(2)	38	60	4	2
(3)	28	70	6	7
(4)	18	80	9	15
(5)	8	90	12	+25

† From the paper by Bose et al. (Ref. No. 5). The unstabilising effect of the higher proportions of alcohol is to be expected. It should be noted that citral is the major bactericidal constituent of lemongrass oil.

tree (also spelled ti-tree) oil has been presented by A. R. Penfold and others. An interesting study by Collier and Nitta[4] emphasized the specific activity against streptococci, gonococci, staphylococci and *Vibrio Nasik* of such familiar oils as cinnamon bark and cinnamon leaf, cassia and lemongrass; with so-called Spanish hop oil extremely active against the peculiarly resistant staphylococcus. As one would expect, carvacrol and origanum oil have been used with some success against *S. aureus*. Eucalyptus, white camphor and sassafrass oils are also of interest in this connection, chiefly because of their reasonable cost, availability and type of odor.

As we later suggest, a very satisfactory type of "clean, antiseptic" odor can be developed on pine/citrus lines: it is therefore worth noting that citral, citronellal and Ceylon citronella oil have also a useful germicidal action, in addition to that of lemongrass oil itself. In the course of a thorough investigation into the bactericidal property of lemongrass oil emulsions, S. M. Bose and co-workers found that "the citral content of lemongrass oil is one of the main factors on which its germicidal power depends."[5] (See Table 3.)

It is well known that certain terpenes and essential oils with a high terpene content exhibit a considerable bactericidal potency. Among the terpenes used in some of the antiseptics under discussion are terpinolene, with its harsh lime oil "edge", and phellandrene. This class of materials is limited in practical use, however, by its characteristically low solubility in water and corresponding tendency to cloud otherwise clear fluids.

Emulsifying Agents

SOAPS are without doubt the best emulsifying agents for this type of preparation, although it is quite possible that future developments will include their replacement, in certain cases, by newer anionic and non-ionic surface active agents. We ourselves are currently undertaking work in this direction. It so happens, however, that castor oil soaps, and to some extent rosin and other soaps, have been used with much success in formulations of the type described.

Castor oil soaps are non-irritant; they are efficient emulsifying agents, especially when used in conjunction with a little terpineol; and they are capable of giving clear, bright fluids of excellent long-term stability. They can also be used in relatively low proportion, a property that tends to cause the least possible lowering of bactericidal potency. In addition, fluids made with castor oil soaps have excellent wetting-out properties and may be readily diluted by the consumer to give milky emulsions of desired concentration.

There have been many attempts, more or less successful, to replace castor oil either partly or wholly in this type of formula. Useful substitutes for castor oil soaps are potassium and triethanoleates. Rosin soaps are perhaps the most useful "extenders" of castor oil soaps, as Robert Haldane & Co., Ltd. point out in a recently published booklet:[6] "The type of fluid normally required consists essentially of a soap solution containing, in addition to the appropriate amount of D.C.M.X., varying quantities of perfume oils and usually some alcohol. The most commonly used soap is made from castor oil or ricinoleic acid, saponified with caustic soda or, in a few instances, with caustic potash. Soaps made from rosin or from mixtures of rosin and castor oil are occasionally employed, but in these circumstances it is generally more difficult to produce a fluid which will remain clear and stable when stored for any appreciable period."

We agree about the disadvantages of rosin soaps. They consistently produce an unsightly haze at low temperatures and, in the presence of traces of free alkali, discolor to give brown or even reddish fluids. While dyes may be used to make a darker color uniform at all times, they cannot of course hide cloudiness. Moreover, most consumers have been conditioned to accept nothing darker than amber. A crystal-clear, golden to amber fluid should definitely be the manufacturer's objective. In other words, the admixture of rosin soaps for the sake of initial cheapness is not a practice likely to be justified by sales statistics. Technically speaking, the maximum proportion of the total soap content that can safely consist of rosin soap is somewhat in the region of 10 per cent.

Refrigerator tests at 40° F. showed no cloudiness in properly

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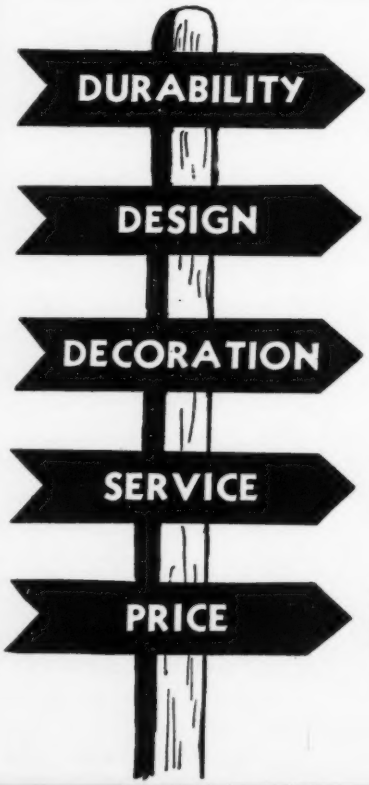

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prepared fluids based on ricinoleate soaps, whereas the corresponding fluids based on oleates showed definite clouding after a short period of 12 hours under similar conditions.

Useful part-substitutes for castor oil include sunflower and safflower seed oils, distilled cotton seed fatty acids, soybean oil and soybean f.a. Of increasing importance are some of the distilled mixed fatty acids now on the market. In some cases it will obviously be preferable to saponify not with caustic soda but with caustic potash.

The main troubles to avoid when selecting a soap base for this purpose are: gelling at low temperatures, progressive discoloration, cloudiness and dissociation. Ricinoleates possess the lowest tendency of all to gelatinize: hence one of the reasons for the popularity of castor oil—but several other "soft" oils and fatty acids are to be noted, not merely in the foregoing paragraphs but also in the voluminous literature on soft soaps and liquid soaps. As for dissociation, this obviously has a bearing on the final blandness and non-irritancy of the fluid, because of its effect on pH: hence the inclusion of fatty acids of high molecular weight must be regarded as particularly undesirable.

Fatty alcohol sulfates and alkyl aryl sulfonates have not so far proved very satisfactory as replacements in this connection for soaps. Nor can sulfonated oils be recommended for the purpose. In fact, considerable experimentation with such products has shown that sulfonated oils depress bactericidal activity, thus requiring a higher proportion of bactericide in order to maintain effectiveness: moreover, they are not cheap, nor do they remain stable for long periods under the conditions of use and storage. This instability is sometimes shown by progressive clouding and sometimes by the presence of off-odors of a sulfurous character.

Castor "seconds" are usually quite satisfactory for the making of these antiseptic fluids. They should be checked refractometrically and by determination of unsaponifiable matter, to ensure the absence of mineral oil as an adulterant. Chemists who wish to carry out a more exhaustive analysis of castor oil are referred to two interesting papers by Gupta and Hilditch[7] and Achaya and Saletore.[8]

Soft Water Best

THE VEHICLE for these antiseptics consists for the most part of a distilled or zeolite-softened water. Tap water, though sometimes used, is normally hard water, and will therefore react with the soap base and spoil the appearance and efficacy of the product on storage. It should be regarded as essential to remove or sequestrate the calcium and magnesium ions and for this purpose a good, softened water is perfectly satisfactory.

Other constituents of the vehicle may include industrial ethyl alcohol or isopropyl alcohol; glycerin, sorbitol, glycols and related solvents. Alcohol assists in the complete solubilization of the active germicides and thus promotes homogeneity: 10 per cent is usually the top limit and very frequently only a small fraction of this amount is incorporated. The other additives mentioned cannot be regarded as really necessary or desirable in a well-balanced formula.

In general, a low alcohol context means a relatively high soap content, although many stable and crystal-clear solutions may be obtained by careful adjustment of such "coupling solvents" as terpineol and (in traces) benzyl alcohol, etc. Cyclohexanol has been used for this purpose but only in household disinfectants, as opposed to germicides for personal use: in any case, many users object to the odor of cyclohexanol. Some manufacturers have deliberately made their solutions alkaline in order to promote greater solubility at lower cost, but as James[2] has pointed out, this undesirable practice not only enhances the possibility of provoking skin irritation but also adversely affects the perfume materials, tends to darken the solution and, worst of all, undoubtedly lowers the bactericidal potency of the germicide.

Perfume Selection

PERFUME SELECTION is an important aspect of the formulation of these germicides. As we have seen, many of the essential oils and synthetics play the dual part of odorant and auxiliary bactericide or bacteriostat. Terpineol fulfills both these functions and, in addition, may frequently contribute to the clarity of the solution. As a starting-off point for the compounding chemist, we suggest the following type of perfume for this purpose:

Terpineol	50 parts
Lemongrass oil	10
Steam-distilled pine oil	10
Benzyl acetate	8
Terpinolene	7
Citronella oil, Ceylon	10
Bornyl acetate	5
	100 parts

This, of course, gives an inexpensive perfume oil of the sharp, lemony-pine type that is nowadays widely popular. (Such compounds go quite well into soap, by the way, and are widely sold for that purpose in Europe.) Variations on the foregoing might well include the introduction of a few per cent of cinnamon leaf oil; a warm shading with about seven per cent of white camphor oil; or the use of a little solid camphor, nerolins, musk xylol, isobutyl phenylacetate, phenylmethyl carbinyl acetate (traces), a little geraniol, cineole, safrole etc. We ourselves prefer to back up the lemony note with a light boost of citral and about five to 10 per cent of phellandrene—keeping the odor straight and clean by using only the pine notes (terpineol, bornyl acetate, camphor oil, etc.) and the citral-citronellal bodies, with just the merest shading of benzyl acetate. Fragrances that are too fanciful

(*Turn to Page* 197)

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Sharples Amines Data

Amylamine, diamylamine, and triamylamine are available in semi-commercial quantities, it was announced recently by Sharples Chemicals, Inc., Philadelphia. They are designed for use in oil-soluble agricultural chemicals, surface-active agents, antioxidants, and other industrial products. Detailed information concerning their properties is available from the manufacturer.

At the same time the firm released a new sixteen page booklet entitled "Sharples Emulsifier Amines for Water Emulsion Floor Polishes". The publication describes first the properties of amine oleates and their role in "no-rub" polishes. Properties and performance of various amines, formulation and testing methods, and effects of variation of formula ingredients are discussed. The brochure should be of interest to anyone concerned with the formulation of water emulsion polishes.

Detergency

(*From Page* 53)

all of the work that has been done is many times larger than indicated here.

Studies With Non-ionics

THE researches that have been discussed up to this point have dealt with the ionic types of detergents. These are structurally analagous to the common soaps. Today however a new type of detergent, the nonionic, is becoming increasingly important and is worthy of careful study. Our tendency has been to expect the nonionics to behave in a manner similar to that of the ionics except that they do not ionize. We overlook one very important fact. The ionic detergent generally consists of a rather large hydrophobic portion and a small hydrophilic group. The solubility of these materials in water is due to their ability to ionize. With the nonionics, reasonable solubility is achieved only when the hydrophilic portion of the molecule is quite large, large enough to be nearly equal to or even larger than the hydrophobic groups. Since solubility probably occurs because of a high degree of solvation of the hydrophilic groups, it is difficult to conceive of any highly organized micellar structure in these systems. Moreover, the negative solubility coefficients of these substances indicate a different mode of interaction with water.

Purity Important

IN considering future investigations which ought to be made in this field, it is well to bear in mind that the question of purity has been all too often overlooked in the past. This is unfortunate since most of these studies have dealt with ionic systems and the presence of ionic contaminants can affect not only the critical micelle concentration but also the micelle size. In addition, there is always the possibility of solubilization of nonionic impurities which could lead to erroneous results. In support of this contention of the importance of purity, the following results are presented:

In a recent paper[10], plots of bubble pressure versus concentration of detergent, similar to those in the lower portion of Figure 6, were shown. (The bubble pressure is defined as the minimum pressure required to maintain a stream of bubbles at a specified rate from an orifice immersed at a constant depth in the solution). Each of the steps in the curves could be associated with breaks in a plot of electrical conductance versus concentration data for the same system. The effects were extremely reproducible and the authors postulated that in each of these systems there were probably more than one micellar species present. Not being willing to accept this conclusion, we[11] made similar measurements first on a commercial sample of sodium dodecyl sulfate and then on a sample of our pure material. The results are shown in Figure 6 and indicate clearly that the presence of impurities was responsible for the peculiar behavior that had been observed.

Impurities can be particularly important in light scattering studies. Typical plots of turbidity with respect to concentration for samples of pure and commercial sodium dodecyl sulfate are shown in Figure 7. The difference is astonishing, the effect with the impure material being observable visually. The explanation for the behavior of the commercial material is that the initial high turbidity is due to an impurity (a long chain alcohol or perhaps a higher, less soluble homolog of sodium dodecyl sulfate) which is subsequently solubilized by the detergent micelles which it will be noted, begin to form at about the concentration at which the peak occurs.

It is hoped that this discussion has made the problem of micelle structure of interest. There is much good work that remains to be done with these systems.

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Liability . . .

(*From Page* 45)

parents of the child in suing the distributor contended that the product should have been labeled to show this potential fire hazard. The court denied liability, holding that the product was not used as intended.[22]

The manufacturer of a cold cream was relieved of responsibility for injury arising from use when the plaintiff failed to prove that the preparation was inherently dangerous within the rule laid down in *Karr* v. *Inecto.*[23]

A negligence action against the manufacturer for injury to the user of a depilatory cream resulted in a jury verdict for the manufacturer in one case but this was reversed on appeal on a technical question involving the question as to whether the plaintiff or defendant has the burden of proof with respect to an issue of contributory negligence.[24] The injury occurred when a portion of the cream squirted into plaintiff's eye while she was opening the metal seal over the mouth of the tube. A warning on the label cautioned "Do not let the cream get in or near the eyes" but the plaintiff contended in effect that there were inadequate instructions as to how this could be avoided.

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(*To be continued*)

Germicides . . .

(*From Page* 193)

and flowery should be avoided, in our view, and preference given only to the sharp clean odors.

About eight per cent, more or less, of the foregoing perfume is used in the finished formula.

Ti-tree oil, the well-known Australian specialty distilled from *Melaleuca alternifolia* appears to be coming once again into fashion. As it possesses high bactericidal potency coupled with an apparent freedom from any tendency to irritate the skin, it might well reassume its old, pre-war status as the ideal aromatic material for this type of disinfectant. As such, it could be used alone or in association with various other essential oils, such as those of bay, thyme, clove, cinnamon, lemongrass, citronella, eucalyptus, origanum and so on.

Hints on Formulation

FORMULATION presents few problems other than those of relative cost and solubility. The labelling of what is probably the most popular British germicide of this type discloses that its active constituents are: "chloroxylenol 4.8 per cent; terpineol 9 per cent." These proportions present a useful guide to formulation in general, although some manufacturers may prefer to replace part of the chlorphenols with benzyl cresol, octyl cresol or other active agents listed above: alternative approaches to formulation may also be made by introducing essential oils, reducing the terpineol content and so forth. A few typical formulae may prove helpful by way of illustration. Here is the British *Pharmacopoeia's* formula for Roxenol (syn. solution of chloroxylenol, liquor chloroxylenolis)[10]:

1. Parachlormetaxylenol B.P.	50	g.
Terpineol	100	ml.
Alcohol (95 per cent)	200	ml.
Castor Oil	63	g.
Potassium Hydroxide	13.6	g.
Oleic Acid	1.5	ml.
or a sufficient quantity		
Distilled Water, q.s. ad	1000	ml.

The mode of preparation suggested is as follows:

Dissolve the potassium hydroxide in 15 ml. of distilled water, add a solution of castor oil in 63 ml. of the alcohol. Mix and set aside for an hour or until a small portion remains clear when diluted with 19 times its volume of water. Add, with stirring, sufficient oleic acid until a few drops of the soap solution give a bluish-green color with solution of bromothymol blue. Dissolve the chloroxylenol in the remainder of the alcohol, mix with the terpineol and add to the soap solution: finally add sufficient distilled water to produce 1000 ml. Industrial alcohol may be used in place of 95 per cent ethyl alcohol. The resultant product should be a yellow to amber colored liquid, soapy to the touch and with an odor of terpineol. When diluted with 19 times its volume of water, it should give a white emulsion from which no oily globules or crystals separate on standing for 24 hours.

Commercial products may in some cases show a considerably lower content of active bactericide than the five per cent stipulated in this official formula, but first-quality products keep pretty closely to the B.P. standard. Some, in fact, may seek to improve upon it by increasing the intensity or range of bactercidal action. Here are a few alternative formulae:

APPROVED

FRANKLIN'S CLEANER . . . for cleaning, stripping and maintaining all floors. A liquid wax soap that seals as it cleans. Highly concentrated . . . one gallon makes up to 40 gallons of fast acting cleaning solution. Cleans by saturation . . . no hard scrubbing.

FRANKLIN'S WAX . . . a tough, long wearing, self-polishing wax. Cuts maintenance costs on linoleum, rubber, asphalt tile, wood, etc. Withstands water and damp mopping indefinitely. Classified by Underwriters' Laboratories as anti-slip.

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MANAGEMENT likes the safe, sanitary, efficient, trouble-free Mione features, plus its economy per pound, low cost per scrub-up, and the basic economy of skilled hands always at top productivity.

EVERYONE who sells washroom supplies will be interested in the competitive price structure, the handsome jobber discount, and the steady repeat orders that come from complete consumer satisfaction.

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2. Chloroxylenols (P.C.M.X. or a suitable mixture)	35	g.
Perfume (as suggested above)	85	ml.
Castor Oil Soap	85	g.
Alcohol	30	ml.
Softened water, to make	1000	ml.
3. Dichlormetaxylenol	20	g.
Perfume oils, approx.	45	ml.
Castor oil soap (25 per cent)	250	g.
Alcohol	16	ml.
Softened water, to make	1000	ml.
4. Parachlormetaxylenol	60	g.
Terpineol	20	ml.
Terpinolene	15	ml.
Castor oil soap	65	g.
Industrial alcohol	15	ml.
Water, to make	1000	ml.
5. Benzyl cresol	4.8	fl.oz.
Ti-tree oil	4.8	fl.oz.
Lemongrass oil	38	minims
Isopropyl alcohol	16	fl.oz.
Triethanolamine	8	fl.oz.
Ricinoleic acid	8	fl.oz.
Water, distilled.... to 1 gallon (U.K.) (one U.K. gallon = 1.201 U. S. gals. approx.)		
6. Benzyl cresol	4.8	fl.oz.
Terebene	3.2	fl.oz.
Sassafras oil	1.6	fl.oz.
Industrial methylated spirit	16	fl.oz.
KOH Solution (10 per cent)	16	fl.oz.
Ricinoleic acid	9.6	fl.oz.
Water, distilled.....to 1 gallon (U.K.)		

Formulae 2 and 4 are based on our own work in this field. Formula 3 is quoted from a booklet issued by Robert Haldane & Co., Ltd.[6] As will be noticed, all these formulae bear a close structural similarity to one another and to Formula 1. Formulae 5 and 6, which are rather different, represent earlier work in this field and are quoted from the *Pharmaceutical Journal*.[9] (In our view a better all-round antiseptic, and one less liable to irritate the skin, would be produced by replacing at least one-half or two-thirds of the benzyl cresol in these latter formulae with parachlormetaxylenol. We approve of the ti-tree oil and lemongrass oil as odorants and auxiliary germicides. Formula 5 is distinctly superior in constitution and performance to Formula 6—and is, in fact, the preferred product for personal hygiene, etc., while the latter is intended chiefly for household or janitor use. The pH of Formula 5 is 8.84 while that of Formula 6 goes as high as 11.0. The anonymous deviser of these formulae adds: "Many essential oils were tried out in order to arrive at a suitable perfume, that would be neither too crude nor too floral in character. Similarly, the choice of a saponaceous emulsifying agent was the subject of considerable experiment; sulfonated oils, potassium, sodium and triethanolamine oleates all showed cloudiness on standing, but it was found that clear preparations, obtained by using ricinoleate soaps, left overnight in the refrigerator at 40°F., showed no cloudiness.[11]

Manufacturing Procedure

MANUFACTURING PROCEDURE is relatively simple in its essentials, but it nevertheless calls for the most careful control and standardization if a really dependable and uniform product is to result. There are two ways of making the castor oil soap, namely the conventional method of adding the calculated quantity of caustic to the heated oil and the reverse procedure (suggested by the B.P.) of adding the oil to the lye. We prefer the second method. On the industrial scale, the calculated amount of caustic soda is dissolved in water and held at 65°-70°F, the room-warm castor oil being added in a thin stream with continuous stirring: the reaction is an exothermic one, and saponification takes place without excessive odor, evolution of steam or risk of boiling-over. This method of procedure is now widely used and is altogether more satisfactory than adding hot caustic lye to the preheated oil.

Supposing that a 100 gallon batch is required of Formula No. 3. This would call for approximately 62.5 pounds of castor oil, which would be run gradually into a heated lye consisting of eight pounds of caustic soda dissolved in about 10 gallons of water, stirring vigorously all the time. Agitation should be reduced after a while and then shut off. When saponification has apparently gone to completion, the usual tests for free caustic should be made, with further additions of oil if necessary. It is essential that the finished soap should be as near to absolute neutrality as is possible—for whereas free oil tends towards cloudiness and is wasteful of raw material, alkalinity favors skin-irritation and lowered bactericidal efficiency. The finished soap is best made up to a 23 per cent or 33 per cent solution with softened water, for ease of handling (pumping, storage, etc.) in the factory.

The following methods of procedure are indicated for Formulae 5 and 6:

5. Mix thoroughly, with vigorous stirring, the triethanolamine and ricinoleic acid. The addition of a very small amount of water during the mixing will speed up the reaction. Dissolve the benzyl cresol in the alcohol, and then dissolve the ti-tree oil and oil of lemongrass in the same solution. Thoroughly mix the alcohol solution with the triethanolamine ricinoleate soap and dilute gradually with water to the required volume. No heating is required for this preparation, but it is important to mix thoroughly.

6. Mix the solution of potassium hydroxide with the ricinoleic acid; heat, and stir until the soap is completely formed. Dissolve the benzyl cresol in the industrial methylated spirit, and then dissolve the terebene and oil of sassafras in the same solution. Thoroughly mix the alcoholic solution with the soap and dilute gradually with water to the required volume.

Use Dilutions

WHEN MADE, the finished antiseptic should be tolerated in its concentrated form on the unbroken skins of all but hypersensitive subjects. It may be used as a five per cent dilution on open wounds. Such antiseptics do not coagulate proteins. They are practically non-toxic and non-irritant. Their action is moderately rapid and is not inhibited in the presence of blood or serum. Recommended di-

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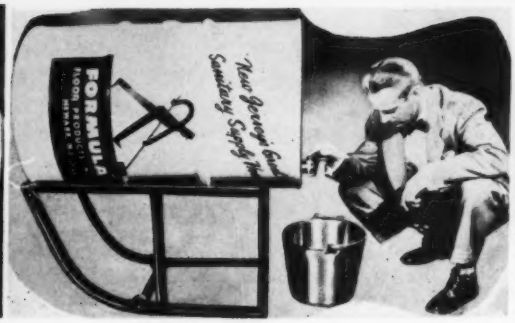

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Specifically prepared for use on asphalt tile, rubber tile and composition floors. Recommended wherever solvent type floor wax cannot be used. Prevents bleeding of colors, pitting, and softening of rubber composition and asphalt tile.

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- Bears Underwriters' Laboratories seal of approval as an anti-slip floor treatment material.
- Saves work — cleans, polishes and protects floor in one operation.
- Spreads evenly and smoothly.
- Lasts longer — does not easily mar, crack or scratch.
- Economical to use — approximately one tablespoonful will wax three square yards.
- Made with the finest available waxes, under strict laboratory control.

Packed in 20 oz. cans — 5 lb cans — 35 lb. pails
Send for samples and further information

TRIO CHEMICAL WORKS, INC.

341 SCHOLES ST. **BROOKLYN 6, N. Y.**

lutions for everyday use are as follows:

For urgent use: In concentrated form, except on sensitive skins, mucous surfaces etc.

For cuts, bites, abrasions: one to 1½ tablespoonsful to a tumbler of water, or about five to seven per cent.

As antiperspirant: one to 1½ tablespoonsful to a pint of lukewarm water (two to three per cent.)

For personal hygiene: one teaspoonful to a pint of warm water, or 0.5 per cent.

As mouthwash or gargle: Maximum 0.5 per cent.

Against dandruff: two or three tablespoonsful to a pint of warm water, for use as a preshampoo rinse.

For spraying rooms, washing floors etc.: A two to three per cent dilution is adequate.

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Wax Refinery

(*From Page* 165)

M. Argueso's factory in Mamaroneck, N. Y. — one of the most modern plants of its kind—is a one story structure, primarily designed for its purpose and landscaped as befits its suburban setting.

Separate buildings house the primary refining plant, storage facilities, the laboratory, and the solvent extraction system. The waxes, arriving in their raw state in bags, are individually weighed, and when assigned for refining, which is done in independent batch lots, are loaded by conveyor into a series of steam jacketed kettles. Filtration is by the plate and frame method, as it is felt that the filter press method is the only adequate means of filtration to give 100% clarity to the finished refined product. Combinations of filter and decolorizing clays are used in this process. Following filtration, the wax of a given run is collected in large aluminum kettles to obtain complete uniformity out of a given shipment. Whereas the crude wax coming from Brazil may have slight variations, the finished product of a given batch is completely uniform and homogeneous throughout due to these specially designed tanks and scientifically installed stirring and mixing equipment.

Once the wax has been thoroughly agitated in these receiving tanks it is passed through jacketed flow pipes to either the flakers or the cooling pans where it is permitted to become solid. Shipments of waxes are either in lumps, flakes, powder or slabs.

A large part of the wax is shipped in the form of lump wax. This wax is allowed to set in pans and is then crushed through the power crushers, equipped with a grading screen which can be set to govern the size of the nugget. From this crusher wax is carried by a bucket elevator to bins, from which it is discharged into burlap bags, drums, or other containers for shipment. Usual packaging is 200 lbs. net units.

The flakers used were designed and tooled by Mamaroneck's own engineering department. While flaking wax would seem to be an extraordinarily simple procedure, it is a difficult operation unless the rate of feed, speed of drums, thickness of cut, and the time during which the hot wax is permitted to make contact with the drums are synchronized with proper chilling. Cooling is obtained by the use of well water which comes from company-owned deep rock wells, as an even temperature must be maintained for this operation. This water is reused in air compressors, condensers, and other water-cooled equipment.

Flaked wax is ordinarily shipped in burlap bags which are lined with Kraft paper liners, giving a unit shipment of 125 lbs. or 150 lbs. net for industrial users. Powdered wax is produced in a series of high speed micro mesh hammer mills. This powdered wax is usually shipped in fiber drums containing approximately 200 lbs. The softer waxes, unsuitable for shipment in other form, are slabbed and packed in cartons when ready for delivery.

As many of the resin wax blends, as well as polyethylene mixtures involving high melting points, are beyond the range of practical workable steam pressures, specially designed, indirectly heated gas fired, power agitated kettles were designed and installed. These insure perfectly blended mixtures. This equipment is installed in a separate department.

M. Argueso initiated the installation of a solvent extraction system to recover the vegetable waxes lost in the initial filtration of these materials. Many methods had been used by various firms to attempt to reduce the amount of wax left in the filter clays, but nothing had ever been effected that was completely satisfactory. This project required considerable engineering and scientific experimentation so that the finished product would come up to the standards set by the company. The extraction of wax from press cake became a profitable business, and many industries use

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these facilities for recovery of their wastes. The recovered wax has proved to be an excellent product, and bears little resemblance to extracted waxes which are shipped from other countries, and which are apparently, at times, contaminated not only with solvent but with large amounts of chlorophyll.

Laboratory Facilities

TO do this work it is necessary to have suitable laboratory facilities. The crude wax must be tested for purity, melting point, chemical characteristics and other factors. Undoubtedly carnauba does possess emulsifying properties, as well as good oil and solvent retention characteristics, but these vary from batch to batch. Therefore, each shipment of wax must be examined thoroughly to determine the best application for the particular properties of the wax.

Customer service work also requires laboratory facilities. Argueso must be in a position to supply the answers to problems arising in the application of wax to such varied uses as wax type floor care products, carbon paper, etc. Although manufacturing processes in particular industries are quite similar, there are variations in formulas of the same type of finished product made by different manufacturers. Thus a raw material that one manufacturer finds satisfactory may not be suitable for another customer making the same line of finished products. It is the function of the laboratory to resolve such difficulties by supplying wax suitable to customer needs. The laboratory must also develop new or improved products for established or novel applications.

In addition to its activity as a wax refiner, Argueso also devotes time and effort to doing new product development research. Among the products it has developed is a line of casting waxes for alloy moldings. These are made in various types and textures and are used in the "lost wax" process. Hundreds of small precision parts vital to our civilian and military economy, including gun parts, jet airplane engine parts, tools, etc., which are virtually impossible to manufacture mechanically, are made by this process. This involves casting a mold in wax. A coating, such as a silica mix, is applied to the wax, which is placed in an investment and surrounded by sand.

The wax is finally melted out, leaving behind a practically perfect mold, into which metal must be cast. In many cases, the metal webs which remain are only a few thousandths of an inch thick. The metal is extremely high melting and hard. Often, the forms are so intricate and the curves which must be devised are so involved that it would be impossible to produce them by a machine.

Argueso executives include, left to right, C. S. Treacy, John J. Garvey, Andrew J. Bohart and J. M. Argueso, Jr. and Sr.

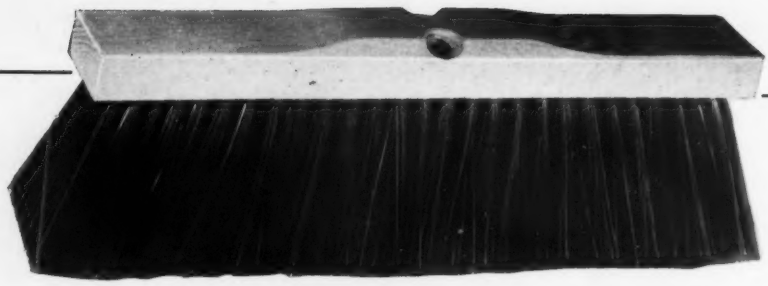
Personnel

C. S. TREACY, a chemical engineering graduate of New York University in 1915, was in Chemical Warfare Service in World War I. He joined M. Argueso & Co. in 1939 as vice-president in charge of engineering and chemical research. Mr. Treacy is active as a member of the American Society for Testing Materials, Committee D-21 on Waxes, and is Chairman of the Qualities Committee of the American Wax Importers & Refiners Association, Inc.

Andrew J. Bohart, vice-president of M. Argueso & Co., is an alumnus of the Wharton School of Finance of the University of Pennsylvania and the Columbia University School of Business. He became associated with M. Argueso & Co. in 1952. Mr. Bohart for over 20 years has been active in the field of foreign trade, in New York, Europe, the Far East, and South America. He is active in the importation and sale of waxes.

L. M. Argueso, Jr., treasurer of M. Argueso & Co., Inc., represents the third generation to enter the business. Mr. Argueso is a 1949 graduate of Yale University, school of industrial engineering, and is active in sales, production and company finance. He was a member of the United States Air Force during World War II.

John J. Garvey, a 1942 graduate of the University of Notre Dame's school of commerce, is secretary of M. Argueso & Co., Inc. He became affiliated with Argueso in 1946, following service in the United States Naval Reserve during the late World War. He is active in sales, factory purchasing, production. Mr. Garvey is presently Secretary of the American Wax Importers & Refiners Assn., Inc., and is active in the Wax and Floor Finishes Division of the Chemical Specialties Manufacturers Assn.



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A HARD GLOSS TYPE WAX WITH ALL THE GOOD FEATURES, BUT NONE OF THE DRAWBACKS

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Rat runway through grassy area is shown in photo at top right.

Weed Control

(*From Page* 161)

Where the customer has an extensive and constant weed control problem such as might be found at a military installation, weed control may become a separate department. The work can then be done when and where it is needed throughout the season, without dependence upon outside services. Of course, under such conditions, the purchase and maintenance of equipment would be justified.

Weed Killer Types

AS industry turns more and more to chemicals to solve the weed problem, they find several groups of compounds to choose from. Chemical weed killers are specialists. Some, like 2,4-D, TCA, and other compounds, are selective in their action. That is, they will kill some species of vegetation and leave others untouched. Others, like "Ammate" weed and brush killer, will kill woody plants, but grass and low-growing plants come back rapidly to prevent erosion. At the other extreme are the "soil sterilants" to be used where it is desirable to keep the ground free of vegetation for an extended period of time and which are designed for use in non-crop areas.

One of the newest materials in this "soil sterilant" class is 3-(*p*-chlorophenyl) - 1,1 - dimethylurea, once known as CMU.* This material is a powder which mixes readily with water. A cupful in two gallons of water is enough to control weeds on an area of 200 square feet for an entire season or longer. This is equivalent to 50

*Telvar Weed Killer is Dupont trade name for 80% wettable CMU wettable powder.

A one-foot swath along fence (six inches on each side) has been sprayed with weed killer. Now power mower can give grounds close trimming without need for hand clipping afterwards.

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FLAKE OR POWDERED SOAPS FOR THE CONVERTOR:

NAMICO "42" — Tallow base, approximately 42 titer, pure, commercially neutral, light cream color.
Flakes — 88% anhydrous soap
Powder — 92% anhydrous soap

WABASH — 39 titer base, pure, commercially neutral, light amber color.
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***COCO - TALLOW** — pure, commercially neutral, white, rapid and voluminous sudsing properties.
Flakes — 88% anhydrous soap
Powder — 92% anhydrous soap

"LT" — low/medium titer soap, pure, commercially neutral, amber color, quick sudsing.
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*Available with lanolin and/or a bacteriostat.

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Samples available upon request.

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We can manufacture soaps built to your particular specification.

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THIS NEW YORK SETTLEMENT HOUSE IS USED 7 DAYS A WEEK

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The Maintenance Supervisor chose

WINDSOR #144

Because it is the best wax he ever used!

- Cuts labor costs 50%
- Contains a blend of the hardest refined waxes known to chemistry
- Is a "grit free," stable, translucent, light emulsion
- Leaves a clear, hard, smooth surface
- Non-inflammable
- Is safe to use on all types of floors
- Anti-slip (contains Ludox)

SEND FOR SAMPLE AND FULL DETAILS OF WINDSOR #144 TODAY AVAILABLE UNDER PRIVATE LABEL

"THE WAX HOUSE"
WAX SPECIALISTS FOR OVER 30 YEARS

WINDSOR
WAX COMPANY, Inc.

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HOBOKEN, NEW JERSEY

Since this herbicide compound works through the roots, it should be applied when there will be enough rainfall to carry the chemical down into the root zone. Applied in the spring before growth starts, it will prevent plant growth throughout the season. The weed killer may be applied to dense weed growth provided sufficient water is used. But best results are obtained if vegetation is mowed and matted growth cleared away, or when applications are made before growth starts. It can be applied with power sprayers suitable for wettable powder mixtures. The sprayer should have continuous agitation to keep the chemical in suspension, and all openings in screen and line strainers should be equal to or larger than 50 mesh.

With a chemical that works through the roots, uniform coverage is essential. Areas missed by the sprayer may show normal growth unless roots extend into the treated area. Usual recommendations are one pound per 1,000 square feet or about 40 pounds per acre to achieve control for at least one season. Where hard-to-kill weeds such as established deep-rooted perennials are present, or where longer control is desired, up to twice this dosage may be necessary.

With all herbicides, certain precautions are necessary. Weed killers should not be sprayed on or near valuable plants or trees or in areas into which their roots may extend. No treatment should be made in locations from which the chemical may be washed into areas where roots of desirable plants may come in contact with the herbicide. Chemicals must be applied with care to prevent the spray or dry powder from drifting onto lawns, shrubbery, gardens, trees, or cropland. When working around irrigation systems, care must be exercised not to contaminate the water with weed killer. Weed killers may also contaminate fertilizers, insecticides, fungicides, and seeds, so they should be kept separate. Sprayers which have been used for weed killers should not be used for spraying insecticides, fungicides or fertilizers on crops, ornamentals, lawns, etc. After using a "soil sterilant", care must be taken to clean the tank, pump, and all lines, booms and nozzles before using the same equipment to apply other weed killers to crops, lawns or ornamentals. In the hands of qualified applicators, chemical weed killers have become an important tool in industrial sanitation and maintenance. They do a long-lasting, thorough job, with minimum labor cost.

Detergents . . .

(*From Page 47*)

larger containers (6-ounce bottles) at no boost in price. In a bid for the housewife's eye, products were reformulated, concentrations reduced further, and the product sold in 7-ounce and 12-ounce containers for about the same price as competitive 6-ounce containers. In addition, large economy sizes of 17 ounces and 20 ounces have appeared on the grocery store shelves.

Other problems presented by the glass containers have been high shipping costs as well as danger of breakage. The introduction last year of a liquid dishwashing compound in a dripless metal package with an aluminum spout would appear to be a long step towards the elimination of these problems. The metal pack can be shipped cheaply, stacked securely, stored compactly, and is unbreakable. In addition it can be lithographed for a brilliantly colored display package.

The future outlook for liquid synthetic detergents points to continued growth. In a little over five years their manufacture has expanded from practically nothing to a $25 to $30 million a year business with sales approaching 100 million pounds. Most of this growth has taken place in the household field. The industrial applications are continuing to grow at a somewhat slower pace, but will unquestionably rise at a slightly faster rate as improved formulations and wider exploitations in fields untouched are developed.

This rapidly expanding industry is bound to be subject to continuous changes. Other companies will enter the market with their products. Formulation changes, based on new sources of raw materials, lower costs and new applications, will occur. Considerable emphasis will be placed on improving emolliency of these products, thus reducing skin irritation. All of this will be done with an eye on the housewife's wishes, because sales depend upon her likes and dislikes.

—— ★ ——

New Austrian Pesticide

A new pesticide comprises a substituted n-benzylidene - aniline, which has in the benzylidene radical at least one halogen nitro-, amino-, cyano-, carbonylchloride-, SO_2Cl-, sulfhydril, alkoxy-, alkyl-, or hydroxyl group (other than disubstitution products in the ortho position to the azomthin group) and an added solid diluent. The components may be suspended or emulsified in a fluid medium and may contain an emulsifying agent or an adhesive.

Examples of active ingredients are: N-2-chlorbenzylidene-aniline, N - 3 - chlorbenzylidene-2 - chloraniline, N-2-chlorbenzylidene-3-chloraniline, N-3-chlorbenzylidene -4-chloraniline, N - 2-chlorbenzylidene-4-chloraniline, and N-2 - nitrobenzylidene-3-chloraniline. Specified solid diluents are talc, kaolin, chalk, and rosin. Other specified additives are tri-ethanolamine in white oil, saponin, and spent sulfite liquor and glue. British patent 662,869, Chemisches Forschungsinstitut der Industrie Oesterreichs.

—— ★ ——

Tamms Names Abbot

Tamms Industries, Inc., Chicago, has appointed S. L. Abbot Co. as representative in the San Francisco and northern California areas, it was announced recently. Abbott has represented Tamms in the southern California area for many years.

Certified SHELLAC

FOR BETTER

GLOSS—LEVELING—STABILITY

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CERTIFIED REFINED WAX FREE SHELLAC

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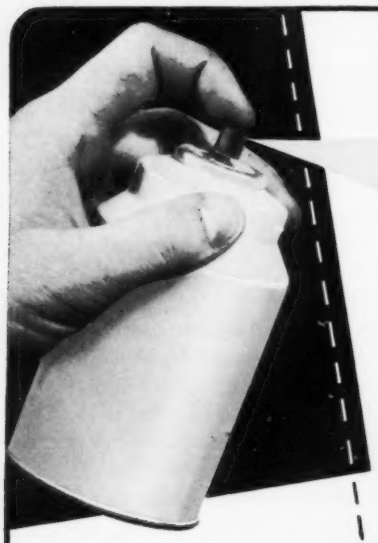

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NEWLY DESIGNED EQUIPMENT assures you of consistant quality, exacting weight measurements, never before obtainable. The result . . . a better product at a lower cost to you.

You can be sure of quick, efficient service whether your product be a delicate perfume in the new glass bottle, a man's shaving cream or a fine spray paint.

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News

V. C. A. Appoints Two

Appointment of Sigmund J. Was as director of sales and research was announced recently by

Sigmund J. Was

V.C.A., Inc., Bridgeport, Conn. He was previously associated with K & T Associates, industrial consultants on aerosols. He succeeds Herbert M. Iselin, who resigned. Mr. Iselin's plans have not been announced.

Royal T. Ferry, Jr., has been named development engineer. Previous to his recent appointment by V.C.A., Mr. Ferry was associated with Bridgeport Brass Co., Bridgeport, Conn., for two and one-half years.

—★—

Albert T. Candy Dies

Albert T. Candy, chairman of the board of Candy & Co., Chicago, died April 19. He was 78. Mr. Candy founded the floor wax products firm with his father and brothers in 1891. His widow, Vera, and son, Al, Jr., who is head of Candy & Co., survive him.

—★—

Carolla Succeeds Friday

The resignation of K. U. Friday from his post as sales supervisor for sanitary maintenance products with R. M. Hollingshead Corp., Camden, N.J., was announced early this month by F. H. Lee, Jr., manager, Government-Industrial Division. Mr. Friday is succeeded by W. L. Carolla, now in charge of sales of sanitary maintenance products.

—★—

Aerosol Plant for Montreal

A new aerosol loading plant was opened recently by John Struthers & Co., Ltd., Montreal, Canada. Space and surface sprays can be loaded under refrigeration or pressure as well as foam type products, according to John Struthers, the firm's president. The formation of this new pressure packing company is subsidized by Sherwin-Williams Paint Co. of Canada, Ltd.

—★—

FTC Drops Insecticide Rules

Trade practice rules for the insecticide and disinfectant industries were rescinded recently by the Federal Trade Commission. The order of rescission says that since these rules were promulgated in 1931, the manufacture, sale, and distribution of these industrial products have become subject to regulation under the Federal Insecticide, Fungicide, and Rodenticide Act. Furthermore, trade practices of the industry are subject to state statutes, according to the Commission.

—★—

Reilly Opens Detroit Office

Reilly Tar & Chemical Corp., Indianapolis, has opened a new sales office in Detroit, it was announced recently by Peter C. Reilly, vice president. A. F. McDonald is in charge of the office.

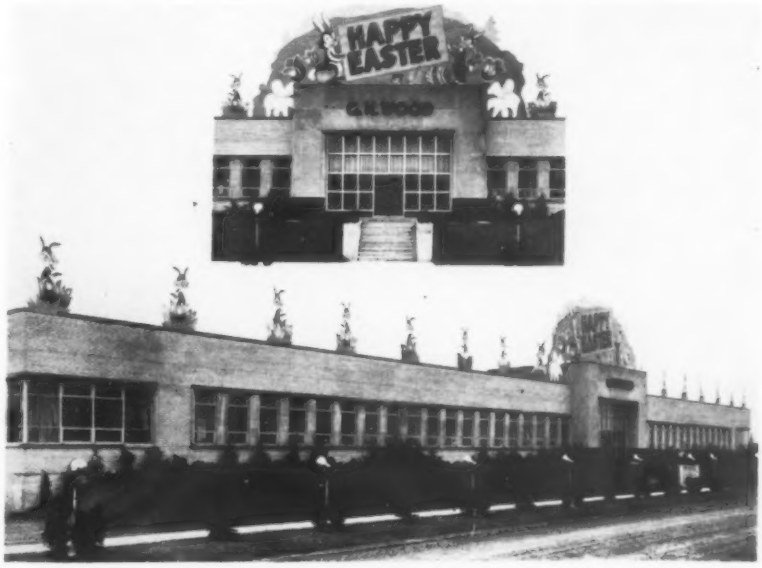
A. F. McDonald

—★—

CSMA Issues Proceedings

The Chemical Specialties Manufacturers Association issued recently the proceedings of its fortieth annual meeting, which was

As a symbol of goodwill the Toronto headquarters of G. H. Wood Co., Canadian sanitary chemical firm, on Queen Elizabeth Way, was decorated with Easter bunnies during the recent holiday season.



Thousands of Maintenance Managers use AMERICAN STANDARD man-sized wet-mops, sweep mops and applicators exclusively. The nation's most successful distributors regularly supply those thousands of AMERICAN STANDARD enthusiasts.

for both ROUGH and smooth floors

For years the VICTORY Wet Mop has been our biggest seller. Thousands of maintenance men use VICTORY wet mops exclusively! Heavy-duty, quality yarn . . Your best bet, if you want a mop of extraordinary durability, performance and economy.

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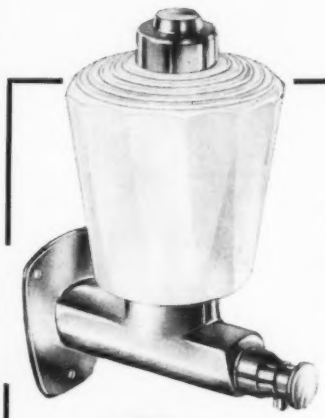
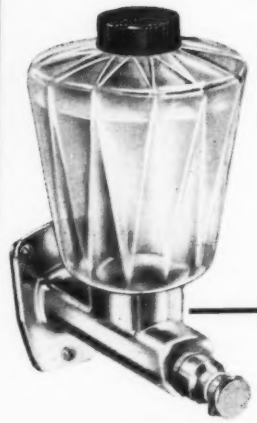
Boost Soap Sales with these Smartly Designed Dispensers!

• Here are a pair of MOORE liquid soap dispensers that really help you sell soap! Trim and clean-looking, they combine durability with attractive design. They won't leak or clog and are easily installed. Heavy chrome plating prevents staining and corrosion. Refilling is easy and quick. Write today for catalog sheets and price lists. Deliveries are prompt!



No. 425
Push-in model: Large opalescent globe. Brass valve mechanism. Key-locked cap.



No. 400
Push-in model: Frosted - glass globe, 14 oz. capacity. All metal body. Bakelite screw cap.

MOORE BROTHERS COMPANY

101 WARREN STREET NEW YORK 7, N. Y.

Quality-proven Soap Dispensers & Dispensing Equipment

held December 7 and 8, 1953 in Washington, D. C. The 218-page paper covered book contains papers presented at the meetings, committee reports, resolutions, and records of other business transacted.

— ★ —

Tide Wax Co. Sold

Sale of Tide Wax Co., McHenry, Ill., by J. C. Wentzel to Murray Stillwaugh, publisher of the *Masonic Chronicler* and high potentate in the Shriners, was announced last month. The former owner, J. C. Wentzel, is joining the Armed Forces. J. Wentzel, Sr., is being retained as a consultant.

— ★ —

M. E. Olstad Dies

Marvin E. Olstad, a salesman for Monarch Cleaning Chemicals Inc., Minneapolis, died recently in that city. He was 47. Survivors are his wife, Jennie; three sons, Gerald R., Osseo, and Loren L.; two sisters, Mrs. George Schoen and Mrs. Arthur Rowlands, all of Minneapolis; three brothers, Carl of Minneapolis; and Arthur and Lewis of Los Angeles.

Photo taken during recent floor clinic given by Hild Floor Machine Co., Chicago, and sponsored by A. Reed Wilson Co.

— ★ —

Hold Floor Shampoo Clinic

A floor, rug, carpet, and upholstery shampooing clinic was held recently at the Muehlebach Hotel, Kansas City, Mo., under the auspices of the A. Reed Wilson Co., Kansas City. Fred C. Hild, president of Hild Floor Machine Co., Chicago, conducted the clinic. He was assisted by Henry J. Metscher, Hild vice president. Latest floor maintenance equipment was practically demonstrated and modern maintenance methods were discussed at the all day event.

D. C. and Va. P.C.A.s Meet

At the annual joint meeting and dinner of the Washington D. C. and Virginia State Pest Control Operators Associations, held March 19 in the Cloud Room of the Washington National Airport, R. E. Kious, director of public relations for N.P.C.A. delivered the principal address. A. E. Ritt, Vogel-Ritt Co., Philadelphia, president of N.P.C.A., spoke on the activities of the national association. Tribute to entomologists commemorating 100 years of professional entomology was paid by Martin T. Meyer, regional vice president of N.P.C.A.

Annual Joint Dinner-Meeting, Washington & Virginia State Pest Control Associations, March 19, 1954, Washington National Airport, Cloud Room, Seated (l. to r.) John W. Hatcher, president, Virginia State Pest Control Ass'n; Col. Williams H. Cary, Jr., Director, Bureau of Pub. Health Engineering, Health Dept., District of Columbia; Martin T. Meyer, regional vice-president, N.P.C.A.; R. E. Kious, director of public relations, N.P.C.A.; Herbert Meyer, master of ceremonies; A. E. Ritt, president, N.P.C.A.; Bishop Napoleon Silver; Walter S. Buswell, president, Washington Pest Control Ass'n.; Standing (l. to r.) Theo. L. Bissell, extension entomologist, Univ. of Maryland; John C. Jones, ass't. district agent, Bur. of Predator & Rodent Control, Fish & Wildlife Service, U.S. Department of the Interior; Dr. Rodney C. Berry, state chemist, Dept of Agric. & Immigration, Commonwealth of Virginia; Dr. Dorr D. Green, Chief, Bur. of Predator & Rodent Control, Fish & Wildlife Service, U.S. Dept. of the Interior; Dr. Thomas E. Snyder, consultant on wood destroying organisms; R. A. St. George, entomologist, Forest Insect Investigations, Agricultural Research Center, U.S.D.A.; Dr. James A. Beal, Chief, Division of Forest Insect Research, Forest Service, U.S.D.A.; Dr. Lyman S. Henderson, asst. head, Stored Products Insects Section, Biological Sciences Branch, Agri. Marketing Service; John Amos, associate extension entomologist, Virginia Poly. Inst.; Dr. C. R. Willey, director-state entomologist, Commonwealth of Va.; Dr. J. O. Rowell, extension entomologist, Va. Poly. Inst.

Dr. C. H. Hoffman, Asst. Chief, Entomology Research Branch Agricultural Research Service, U.S.D.A.; Dr. T. F. McGough, director of public health, City of Alexandria, Va. David G. Hall, Chief, Information Div., Agr. Res. Svce., U. S. D.A.; M. P. Jones, extension entomologist, Bur. of Ent. & Plant Quar., U.S.D.A.; A. H. Neill, Acting Regional Engineer, Dept. of Health, Education and Welfare; A. Clarke Slaymaker, chief sanitarian, City of Alexandria, Va.; Walter Dykstra, Fish & Wildlife Service, U.S. Dept. of the Interior; Clarence W. Travis, entomologist, Bureau of Public Health Engineering Health Dept., District of Columbia; George S. Langford, Entomological Section, Maryland U.

1 STOP

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Dedicate Taft

THE Robert A. Taft Sanitary Engineering Center of The U.S. Public Health Service, a $4,300,000 building, was dedicated April 8 by Oveta Culp Hobby, Secretary of the Department of Health, Education and Welfare. The Center, under the direction of Vernon G. MacKenzie, Officer in Charge, is the focal point of the Federal government's research and study into how the health of human beings may be affected by contacts with elements found in air, water and food, and by radiation and other factors in the environment.

The structure, located about six miles east of downtown Cincinnati, until recently known as the Environmental Health Center, was authorized by the 80th Congress, in 1948, under bipartisan legislation. Dedicated to research, field investigations and training in the sanitary sciences, it is the only laboratory in the U.S. to attempt a coordinated study of the health significance of physical, chemical and biological forces in environment.

Dramatic population changes, growing industrialization, increasing use of atomic energy and other factors in modern civilization are making it daily more important that the effects of the environment on the Nation's health be understood and that the Nation develop and apply the necessary control technique to assure a healthful environment for its population. In recognition of these needs, engineers and scientists at the Center are engaged in problems of such water-borne diseases as infectious hepatitis; of water-borne toxins generated by algal growth; of hazardous chemicals in the water supply and in the atmosphere; control of environmental radiation hazards which have been accentuated by the growth of the atomic energy industry; and the development of rapid, automatic and economical means for detecting and measuring contaminants in air and water by

Sanitation Center

use of modern electronic technique, such as the use of infra-red waves to "fingerprint" bacteria.

The Robert A. Taft Sanitary Engineering Center, Cincinnati, which was dedicated last month.

One outstanding study is the application of a molecular filter which strains out all bacteria from drinking water. This filter not only offers major economies to public water works in providing a more rapid and economical method of examining drinking water for bacteria, but is also used to insure the safety of drinking water taken from wells, lakes and springs.

Of particular professional interest is the Center's training program for State and local health workers in advanced sanitation and radiological health subjects. During the past five years 160 training courses have been conducted, attended by more than 6,300 public health specialists from the 48 states and many foreign countries. The new laboratories are equipped with unique "classroom labs" for the accommodation of such visitors.

Highly infectious viruses must be handled under specially designed safety hoods. Here a virologist is inoculating an infectious virus into fertile eggs in which it will multiply.

The Center's monthly publication, *Public Health Engineering Abstracts*, covers 12 subject fields and is designed so that sanitary engineers, scientists and public health administrators may have access to the latest findings of others.

The isolation and identification of bacterial toxins which cause food poisoning outbreaks have been a difficult task in the past. Here an automatic fractionator is being used to separate a mixture of toxins to obtain the specific ones responsible for food poisoning symptoms.

—★—

New Hudson Catalog

A new 42-page illustrated catalog of sprayers and dusters was issued recently by H. D. Hudson Manufacturing Co., Chicago. The publication is divided into 11 sections covering compression sprayers, "Bak-Pak" sprayers, trombone sprayers, bucket and barrel pumps, "Porta" sprayers, power sprayers, electric sprayers, hand sprayers, power dusters, crop and hand dusters, and accessories and service parts. A four-page insert carries a complete and up-to-date dealers price list for use with new catalog.

Introducing:

DUROXON J-324

DUROXON J-324 is a high-melting, hard, yellow mineral wax with high solvent and oil retention power. It has excellent gloss properties. Here is a superior replacement for high-priced vegetable waxes in the manufacturing of solid and liquid solvent-type polishes. Ask for detailed information today.

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Please send me sample, formulations and literature on DUROXON J-324.

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INSIST ON THESE FEATURES IN THE FLY-KILLERS YOU SELL

MODEL U-101

1. WESTINGHOUSE adjustable Thermostatic Controls.
2. Heavy duty CHROMALOX heating elements, commercial type.
3. Lifetime neon Pilot Lights.
4. EXCLUSIVE — Heavy aluminum heating jacket, assures constant vaporization rate, least affected by changes in room temperature, air conditioning, etc.
5. Indestructible glass-lined, steel cups. REMOVABLE.
6. $50,000 Product Insurance covers each unit.
7. Nationally advertised and unconditionally guaranteed by Universal, the leading and most reliable vaporizer manufacturer. Priced Right for Reasonable Profit. (Also supplied in portable model—DOUBLE-DUTY with added deodorizer feature).

UNIVERSAL LINDANE in 1 oz. packets, Leak Proof and Heat Sealed to assure maximum killing potency.

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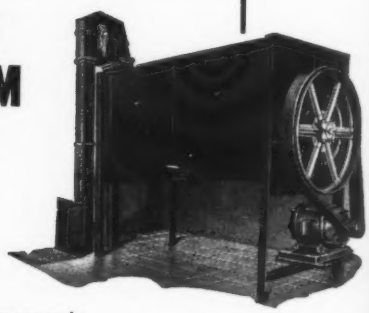

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RAPIDS MACHINERY CO. S-554, Marion, Iowa

Record N. Y. N. S. S. A. Meeting

A RECORD turnout of distributor and manufacturing members of the National Sanitary Supply Association was on hand for a special dinner meeting of N.S.S.A. members in the New York area held in the Yacht Lounge of the Hotel Barbizon Plaza, New York, the evening of April 28. Over 80 members and guests attended the reception and dinner. Lee E. Fried of Enterprise Paper Co., New York, was program chairman for the meeting, which was arranged by Burton L. Feinson, American Dispenser Co., New York, and eastern regional vice-president of the National Sanitary Supply Association.

The meeting featured a sound motion picture in color of "Dusting" prepared by and shown through the courtesy of the New York Telephone Company. The importance of reducing dust to a minimum in telephone company offices and operating units in order to create a pleasant atmosphere for customers and to assure trouble free operation was stressed in the film. Suggestions on the best methods and tools for dusting were described and demonstrated in the motion picture.

The highlight of the evening was an address on selling by Charles W. LaBlanc of the executive staff of the Research Institute of America, Inc., New York. Mr. LaBlanc opened his remarks by pointing out that if our national economy is to grow in 1954 and 1955 and the output of the gross national product is to be expanded in the next two years, it will depend on the efforts of salesmen. The gross national product of the U. S. in 1939 was valued at $91 billion and rose to $370 billion in 1953, he stated. If there is no war or government "pump priming," the further expansion of the nation's economy will be up to the salesman, Mr. LaBlanc declared.

After listing the rate of our population increase, and the gradual raising of family incomes from 1939 to 1953, Mr. La Blanc pointed out that many salesmen had never sold in a competitive economy. He warned that today "buyers are better educated, more sophisticated and more difficult to sell."

Adding to his difficulties is the fact that the salesman has to get all of his results through people, and people can be very complicated. Sometimes they will do something, and later ask themselves why they did it. This is at the base of many disagreements and confusion. Frequently the buyer misunderstands what the salesman is trying to tell him. Salesmen should be sure the buyer understands what he is saying.

The salesmen is the company in the eyes of the buyer, Mr. LaBlanc pointed out. If the salesman does a good job in representing his company, then the buyer thinks the company is a good one. If the salesman fails to give what the buyer considers is satisfactory service, in the eyes of that buyer the company represented by the salesman is not such a good one.

Mr. LaBlanc outlined the sales executive's responsibilities as 1.) sales; 2.) quality of sales; 3.) cost of sales; 4.) satisfying customer needs and 5.) building good will. Like the salesman, the sales executive gets his results by dealing with people, whether it be his boss, the head of the manufacturing department, his advertising manager, and the salesmen themselves. If the line of communications between the sales executive and those working with him is not clear and functioning correctly, the efficiency of the company's whole sales operation is impaired.

As an example of the way psychological factors can be employed to improve sales, Mr. La Blanc reviewed the so-called "Hawthorne Experiment", conducted at a Westinghouse plant in the late Twenties. In the experiment a group of girls in the factory were chosen to determine what factors caused an increase in production. As a result of granting benefits to the girls who participated in the experiment their production began

New N.S.S.A. officers and directors whose photographs arrived too late to be included in the April issue are, l. to r.: W. M. Pettett, W. M. Pettett Co., Miami, Oklahoma, southwest regional vice-president; Gordon E. Kent, Kent Co., Rome, N. Y., director; and Ernest Cooper, Clarke Sanding Machine Co., Muskegon, Mich., central vice-pres.

to climb. Later, when these benefits were taken away, surprisingly enough, there was no decline in production.

The reasons for this as outlined by Mr. LaBlanc were: 1.) the girls were made to feel important; 2.) they were kept informed as to what was going on at all times; 3.) they were given a chance to be heard.

Applying psychological factors to selling, Mr. LaBlanc listed six rules to follow in handling objections from prospective buyers:

1.) Relax. When the customer offers an objection relax, and the customer will do likewise.

2.) Listen to what the buyer says and understand what he means when he says something. Let the buyer get the objection off his chest and when he does the importance of the objection diminishes.

3.) Concede the fact that the customer has an intelligent objection.

4.) Question him; get the buyer to justify his objections.

5.) Qualify. Attempt to reduce the buyer's objection to buying to one reason.

6.) Close.

The salesman should welcome objections and not try to smother them with facts, Mr. La Blanc stated.

In addition to members from the New York area, jobbing and manufacturing members from Baltimore, Philadelphia, Boston, Auburn, N. Y. and Connecticut attended the meeting. Gordon E. Kent of Kent Co., Rome N. Y., a director of the N.S.S.A., attended the meeting. A telegram was received from another director, C. R. M. Sheppard of Fenole Chemical Co., Jacksonville, Fla. Mr. Sheppard sent his best wishes and expressed his regret at being unable to attend.

Past officers and directors attending the meeting were introduced and included Martin J. Peters of Moore Brothers Co., New York; Samuel Newman of Creco Co., Long Island City, N. Y.; Jack Gantz, Empire Brush Co., Port Chester, N. Y.; James E. Reider, Geo. T. Johnson Co., Boston; Joseph Fuld, Fuld Brothers Co., Baltimore; and Charles B. Solly, Harley Soap Co., Philadelphia.

★

Michigan Reelects Board

Michigan Chemical Corp., Saint Louis, Mich., reelected all members of the board it was announced last month. Members of the continuing board of directors are: T. C. Davis, Missouri Pacific Railroad Co.; J. D. Frost, Frost, Blanchet & Co.; Arthur J. Fushman, Manufacturers National Bank of Detroit; Donald D. MacFarlane, Barbier, MacFarlane & Tolleson; Theodore Marvin, chairman of the board and president; J. H. McMullen, McMullen & Hard; Roland P. Place, U. S. Radiator Co.; Clyde H. Reeme, Udylite Corp.; E. W. Ross, CPA Co.; and F. L. Van Lennep, Castleton, Inc. and Infra Electronics Corp.

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Your pail and drum needs can be solved quickly and easily by Vulcan Steel Container Company.

Leading chemical manufacturers and processors throughout the South depend upon Vulcan for:

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NSSA Meets in Boston

"What the Manufacturer Expects of the Distributor" was the theme of a local dinner meeting held by the National Sanitary Supply Association last month at the Hotel Shelton, Boston, Mass. Arthur Pinsley, White Mop Wringer Co., Fultonville, N. Y., presided. Speakers included E. J. Grant, S. C. Johnson & Sons, Inc., Racine, Wis.; George E. Bezgin, Baird & McGuire, Inc., Holbrook, Mass.; and Ben Blumenberg, Piedmont Mop Co., Charlotte, N. C.

Among those present was former N.S.S.A. eastern regional vice president, James Reider of George T. Johnson Co., Medford, Mass. Burton L. Feinson, American Dispenser Co., New York, who is the current eastern regional vice-president, outlined some of the association's functions and read excerpts from the address made by NSSA president, Philip Shore of Shore Metal Products Co., Los Angeles, during the recent annual N.S.S.A. convention in Chicago.

★

Sharples Names 3 V.P.'s

Sharples Chemicals Inc., Phliadelphia, recently announced the appointment of Howard F. Bjork as vice president, manufacturing; Howard I. Cramer as vice president, development; and George R. Lawson as vice president, sales.

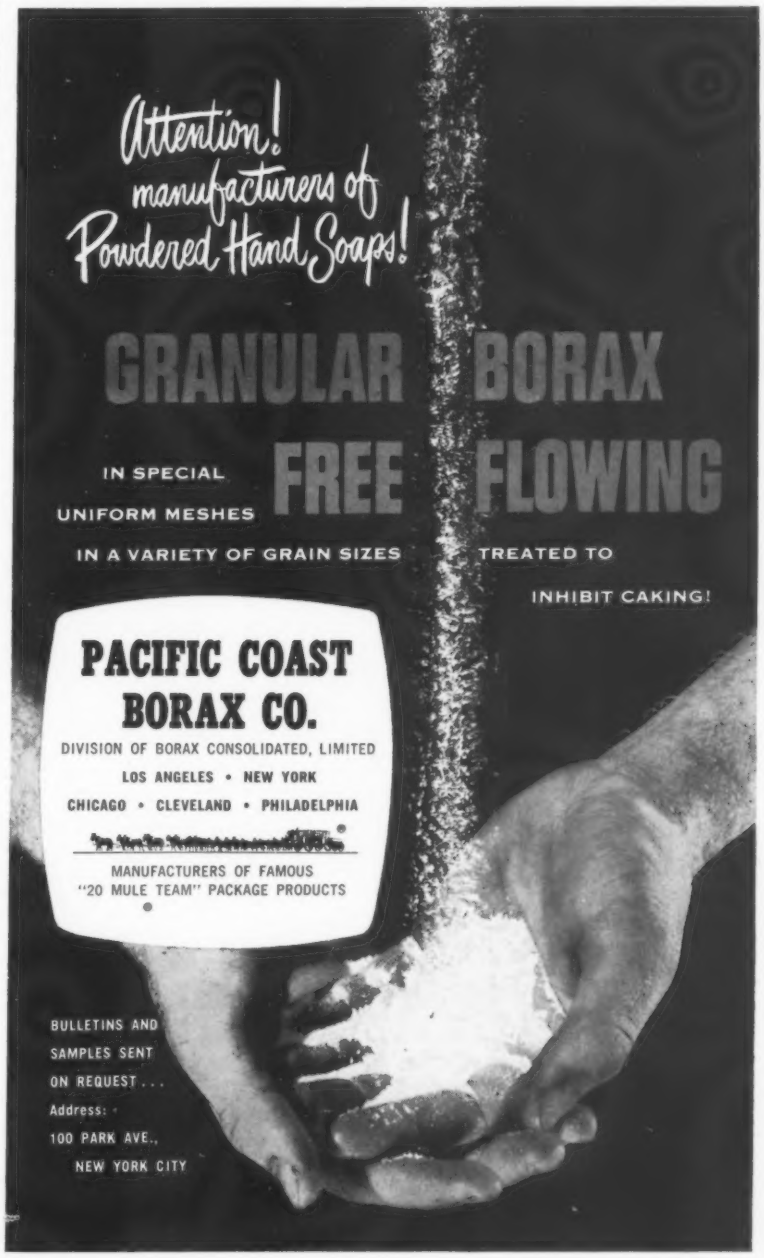
Mr. Bjork is a graduate of the University of Michigan and has held various positions at the Sharples plant for the last 17 years including that of plant manager since 1950.

Dr. Cramer has been a member of the Sharples development department for 13 years and its director since 1944. He is a graduate of the Universities of Akron and Wisconsin. He served in 1951 as chief of the Aliphatic Organic Chemicals Section of the Office of Price Stabilization.

Mr. Lawson came with Sharples as a technical representative in 1946 and has held various positions in the Sharples sales department including that of general sales manager since 1951. He is

G. R. Lawson | H. F. Bjork | H. I. Cramer

a 1927 graduate of Yale University and was a consultant in the Office of Production Research and Development during World War II.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FREE FLOWING
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MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS
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Des Marais Joins Geigy

Hubert A. Des Marais, until recently general sales manager of Pennsylvania Salt Manufacturing Co. of Washington, recently joined Geigy Chemical Corp., New York, as manager of the industrial chemicals division. A 1926 graduate of Dartmouth College, where he received a B.S. degree, Mr. Des Marais had also been connected with General Dyestuff Corp., New York, as technical sales manager on the west coast. Mr. Des Marais is making his headquarters at Geigy's main office, 89 Barclay St., New York 8, N. Y.

—★—

New Carter Ad Agency

Carter Products Inc., New York, has appointed Robert Otto & Co., international advertising agency, to handle worldwide advertising for "Rise", aerosol shave.

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CERITA WAXES

M. ARGÜESO & CO. INC.
Established 1908

PICCO Transfers Wolfe

Lester J. Wolfe was recently appointed Chicago district sales manager of Pennsylvania Industrial

Lester J. Wolfe

Chemical Corp., Clairton, Pa. Prior to joining PICCO as a sales executive last August, he was assistant manager of sales for General Chemical Division, Allied Chemical & Dye Corp., New York. He also has served as director of sales for Man-Gill Chemical Co., Cleveland. Mr. Wolfe is a graduate of Allegheny College, with a B. S. degree in chemistry.

—★—

New Dura Mineral Wax

"Duroxon J-324", a high-melting, hard, yellow mineral wax, was introduced recently by Dura Commodities Corp., New York. The product is said to exhibit high solvent and oil retention and good gloss properties. It is recommended as replacement for high-priced vegetable waxes in the formulation of solid and liquid solvent-type polishes. Detailed information may be obtained from Dura.

—★—

Watson to McCormick

K. Brantley Watson, vice president in charge of personnel for the Federal Reserve Bank of Richmond, has been appointed director of human relations for McCormick & Co., Baltimore, it was announced recently by Charles P. McCormick, president and chairman of the board. Mr. Watson will assume his new duties on August 1.

Dedicate New Orlando Lab

New facilities for the twelve year old Laboratory of Insects Affecting Man of the Entomology Research Branch, Agricultural Research, U. S. Department of Agriculture, were dedicated recently at Orlando, Fla., by Ezra T. Benson, Secretary of Agriculture. Dr. E. F. Knipling, chief, Entomology Research Branch, U.S.D.A., presided over the dedication ceremonies. The present chief entomologist, W. C. McDuffie, also participated in the dedication ceremonies.

The new quarters consist of nine remodeled wooden buildings, comprising 25,000 square feet of laboratory and office space equipped at a cost of $70,000 and housing a permanent staff of 40.

The station's current research program includes work on

1. Repellents - effective against various species of ticks, fleas, chiggers, mosquitoes, and biting flies.

2. Louse control - searching for more effective and safe insecticides for the control of human lice. Studying the development of resistance in lice to insecticides.

3. House fly control - searching for more effective insecticides for use as sprays and residues for the control of resistant flies. Developing poison baits for fly control. Studying house fly resistance to insecticides.

4. Mosquito and sand fly control - searching for more effective insecticides for the control of mosquito and sand fly larvae and adults. Developing improved methods of applying insecticides. Studying mosquito resistance to insecticides.

5. Chemical research - studying factors involved in the deterioration and decomposition of stored insecticides. Developing improved insecticidal and repellent formulations. Developing methods of impregnating clothing with repellents. Developing methods of analysis for various repellents and insecticides. Preparation of specifications for procurement of insecticides and repellents by the military.

The work at this station is supported by a transfer of funds from the Department of Defense and follows broad lines indicated by the Army Committee on Insect and Rodent Control. The administration and actual conduct of the work is a function of the Section of Insects Affecting Man and Animals, the head of which is Dr. A. W. Lindquist. This section is a part of the Entomology Research Branch, of which Dr. Knipling is chief.

Top photograph shows part of new Orlando Laboratory facilities. Buildings shown in photo are louse research laboratory, right; chemistry laboratory, center rear; Administration building, center front; toxicology laboratory, left, and screw worm research (sublaboratory of Kerrville, Tex. laboratory) far left.

Secretary of Agriculture Ezra Taft Benson speaking at the dedication of the new Orlando facilities is shown in center photo. John H. Mulrennan, entomologist, Florida State Board of Health, and Dr. E. F. Knipling, Chief, Entomology Research Branch, Agricultural Research Service, U.S.D.A., are seated at left and right, respectively, to the rear of Mr. Benson.

In the bottom photograph Secretary Benson is shown shaking hands with Dr. A. N. Moseman, director, Corps Research, Agricultural Research Service, U.S.D.A.

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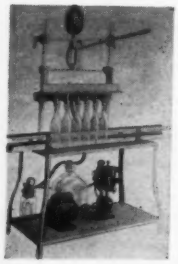

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New agricultural chemicals laboratory of Hercules Powder Co. in Wilmington, Del. Research to test and develop new insecticides, fungicides, and herbicides is centered here.

Opens New Research Lab

A new laboratory devoted to research activities in the development of new fungicides, insecticides, and plant regulatory chemicals was officially opened last month by Hercules Powder Co., Wilmington, Del. The staff of the new agricultural chemicals research laboratory, numbering 18 and headed by E. N. Woodbury, will be able to screen up to 300 formulations a month. Facilities include constant temperature and humidity rooms for the raising of cultures, test rooms, and separate transfer rooms for the handling of specimens. Special rooms for the rearing of houseflies and other insect pests are provided. No air from any of the rooms is recirculated. Air pressure in each test room is lower than that prevailing in the hallways. When a test room door is opened the air from within will not flow into the hall and into other rooms.

The laboratory is supplied with a constant stream of new chemicals by the main experiment station, according to Richard T. Yates, who is in charge of sales and research activities of the agricultural chemicals group.

Checking a fly cage in Hercules' new agricultural chemicals laboratory in Wilmington. Test cage contains 50 house flies, which have just been sprayed with new insecticides in spray towers at left.

McDonnell Moves

C. C. McDonnell, consultant in the pesticide field, recently moved to 4703 Morgan Drive, Chevy Chase 15, Md. His new telephone number is Oliver 2-1905, a Washington, D.C., exchange.

—★—

Plan Sanitary Supply Show

The Industrial Housekeeping Safety Guild, Inc., Philadelphia, recently announced plans for its first annual all-industry trade show, convention, and symposium to be held at the Hotel Ambassador, Atlantic City, N. J., Nov. 6 through 11, 1954. Executive director of the Eastern Sanitary Supply Group, sponsoring the event, is William F. Plowfield, with headquarters in Philadelphia.

So far seven groups have been established within the new organization: 1. distributors and manufacturers' agents; 2. distributor-manufacturers (manufacturers who sell direct); 3. manufacturers (who sell through the distributor); 4. service companies; 5. floors materials and laying; 6. publishers; 7. maintenance and management representatives (building owners and managers, maintenance and safety operators). Each of these groups will elect its own chairman and secretary. These will constitute a joint committee which will meet with the board of directors of the Industrial Housekeeping Safety Guild to determine policies and programs for future meetings and conventions.

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D & O Aerosol

(*From Page 49*)

for colognes and women's cosmetic items; blue and black for shave creams and men's toiletries; green and black for insecticides, room deodorants and similar products. In most instances caps of matching color are also provided.

—★—

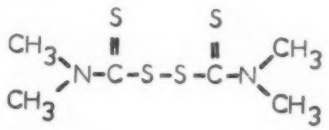
New Fly Control Agent

The new phosphate insecticide designated "Diazinon", and intended for fly control in non-dairy barns, sheds, and poultry houses, has been approved, it was announced recently by Geigy Agricultural Chemicals Division of Geigy Chemical Corp., New York. The material is commercially available as a 25 per cent wettable powder and one per cent bait. Still under test are 25 per cent "Diazinon" emulsion concentrate and four per cent dust. Sprays of 32 pounds wettable powder in 100 gallons of water give effective control of flies over a period ranging from three to seven weeks, according to Geigy, who stresses that the material is effective against house flies which are resistant to chlorinated hydrocarbons. "Diazinon" is not suitable for use in human dwellings, food processing establishments, dairy barns, or on animals.

—★—

TMTD Formula

In publishing the article, "New Antiseptic for Soap" by J. L. Vinson, in the April issue of *Soap and Sanitary Chemicals* the formula for tetramethylthiuram disulfide (TMTD) was inadvertently omitted. The material can be regarded as an oxidation product of thiocarbamic acid and has the formula below:



Preen Wax Record

The 1,500,000th gallon of "Preen" floor wax has passed through the packaging lines of A. S. Harrison Co., South Norwalk, Conn., it was announced recently by Allrich S. Harrison, president. A small celebration in honor of the event was held at the firm's offices.

—★—

Ethyl Offers TCB Data

An extensive data sheet containing information on technical trichlorobenzene, its properties and uses, was issued recently by Ethyl Corp., New York. The firm markets technical TCB in 55-gallon steel drums and in 6,000 and 10,000 gallon tank cars.

Letters . . ,

(*From Page 41*)

annual Plant Maintenance Show and Engineering Conference in Chicago. The show was sponsored by Clapp & Poliak, 341 Madison Ave., New York 17, N. Y., which firm issues a proceedings of the entire discussion portion of the conference. Ed.

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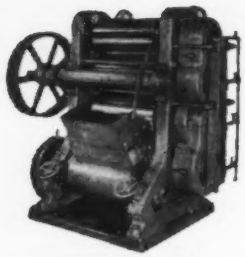

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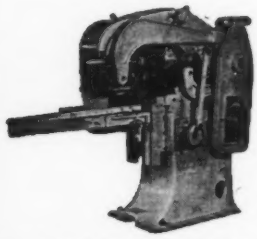

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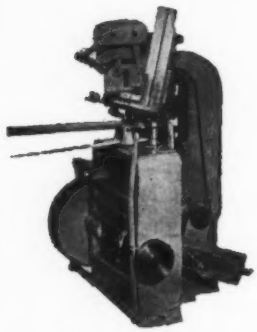

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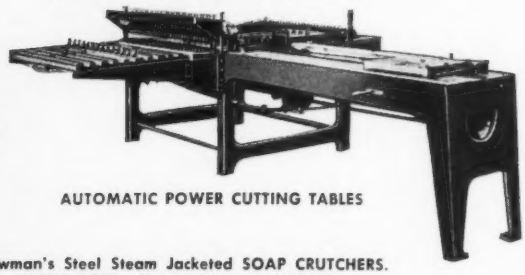

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Soapmaker: With more than 20 years experience on all kinds of laundry and toilet soaps, glycerine recovery. Experienced soap chemist. Seeks new connection. Address Box 192, c/o *Soap*.

Detergent Chemist: Seven years experience includes research anlaytical, technical service, formulation chemical specialties, preparation anionic and nonionc detergents. Seeking position in New York Metropolitan area. Address Box 195, c/o *Soap*.

Chemist: Household products widely experienced in waxes, polishes, lacquers, adhesives, emulsions, also automotive chemicals, desires connection with progressive firm. Metropolitan area preferred. Address Box 196, c/o *Soap*.

Soapmaker: Thirty years practical experience in laundry and toilet soaps. Seeks change. Capable of taking full charge small or medium size plant. For details, write Box No. 202, c/o *Soap*.

Superintendent: Specializing in manufacture high grade toilet soaps. Twenty years experience. Will locate anywhere. Presently employed. Box No. 203, c/o *Soap*.

Sales Manager: Young, aggressive, personable and neat with 15 years sales experience. Exceptionally heavy background in all phases pertaining to industrial sales of sodium and potassium soaps and detergents. Proven record of successful sales management, product development, coordinated marketing, advertising and programming. Desires association with manufacturer offering opportunity of becoming integral part of organization. Preferably through stock acquisition. Straight salary not considered. Any offer must provide arrangement for commission or over ride. Minimum requirements $12,000. Address Box 204, c/o *Soap*.

Miscellaneous

Manufacturer's Agent Wanted: Aerosol manufacturer branching into sanitary maintenance field desires representation in Atlantic seaboard and New England territory. Complete line of products with own brand name in private labels. Address Box 197, c/o *Soap*.

Salesman: to sell miniature guest soap to janitor, institutional and hotel jobbing trade. "Wrapped and unwrapped." Low prices. State territories, & trade items you now sell. Address Box 205, c/o *Soap*.

Line Wanted: Wanted by manufacturer's sales agent, line of sanitation chemicals or chemical specialties to sell in the southwest. Headquarters in Dallas. Two men regularly working territory. At present handling line well-known brushes. Interested in selling only top products. Best references. Address Box 199, c/o *Soap*.

Attention Manufacturers: We buy and sell all sizes, quantities and types of bottles, jars, metal and plastic caps of every description. For additional information contact us at Penn Bottle & Supply Co., 5619 Cherry St., Phila., 39, Pa., GRanite 4-6967.

Wanted: Complete soap or sanitary chemical plants. Also individual items such as crutchers, plodders, mills, mixers, presses, dryers, filling equipment, etc. R. Gelb & Sons, Inc., State Highway No. 29, Union, N. J.

Share in Development: Do you want to share in Canada's industrial development? Canadian distributor with warehouses in Toronto and Montreal seeks additional lines to sell to industrial, institutional, hospital and governmental outlets. Full particulars please. Address Box 198, c/o *Soap*.

Wanted: Complete soap or process chemical plants and machinery including kettles, frames, crutchers, pulverizers, cooling rolls, chip dryers, plodders, cutting tables, evaporators, packaging units, automatic soap presses, mixers, stainless steel tanks. P. O. Box 1351, Church St. Sta., New York 8, N. Y.

For Sale: Small specialty soap manufacturing plant in Brooklyn, due to illness and advancing age. Must have knowledge of soap making. Selling ability helpful. Good opportunity for growth possibilities. Address Box 200, c/o *Soap*.

Plant for Sale: Owner to retire. Mfg. disinfectants, detergents, chemicals, cosmetics 25 years. Trade marks reg. U. S. A. Pat. Office. 35 wholesalers stock the products. For details contact Nord Chemical Company, Duluth 6, Minn.

For Sale: Soap dispensers for waterless, cream, paste—porcelain enameled—heavy construction—10 pound capacity. National Soap Dispenser, 10216 L. Salle Ave., Los Angeles 47, Calif.

Stainless Steel tanks and kettles. Steel tanks and kettles; crutchers; powder mixers; pulverizers, etc. Perry Equipment Corp., 1410 N. 6th St., Philadelphia 22, Pa.

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Standard Knapp 429 Carton Sealer; Jones, Ceco Carton Sealers.
Hudson Sharp Campbell Automatic Cellophane Wrapper.
Package Machinery FA, FA2, FA4; Scandia Wrappers.

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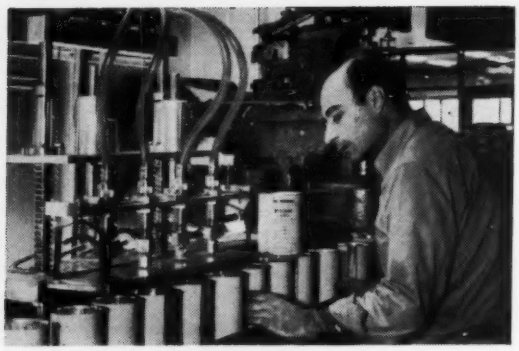

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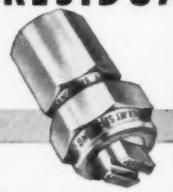

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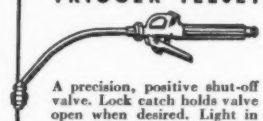

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For Sale: Pneumatic Scale Packaging line complete; Houchin 10″ jumbo plodder; Lehmann 14″ plodder; Houchin 14″ x 36″ 5-roll inclined w.c. mill; Jones automatic laundry & toilet soap presses; Pkg. Machy. model TT and model N soap wrapping machines; 1500 lb. to 6000 lb. crutchers; 12″ to 42″ filter presses; powder mixers; paste and liquid mixers; Rotex screens; Hammer mills; soap frames; jacketed kettles; pumps; agitators; gluer-sealers, etc. Ask us to quote — Send us your list of surplus machines or plants. Consolidated Products Co., Inc., 59 Garden Street, Hoboken, New Jersey. Tel: HO 3-4425. N. Y. Tel: BA 7-0600.

Announcement: Completely new, up-to-date book, HANDBOOK of PEST CONTROL by Mallis, ready for sale. See page 148.

Sanitary Chemicals, new, up-to-date book, See page 62.

(Newest Revision) now available . . . 44 pages listing over 1000 detergent products by trade name, manufacturer, class, type, formula and uses—price $1.50. Remittances must accompany order. Available direct from author. John W. McCutcheon, 475 Fifth Avenue, New York 17, N. Y.

For Sale: By I. E. Newman, 5602 Blackstone Ave. Chicago, Ill. Jones automatic laundry & toilet soap presses; 1500 lb. to 6000 lb. crutchers; 10″ plodder; Automatic cutting table; Type S wrapper; Filter presses; Powder mixers, etc.

For Sale: Allbright-Nell 4′ x 9′ chilling rolls. Blanchard #14 soap powder mill. Lehmann 4-roll W. C. 12″ x 36″ steel mill. Houchin 8½″ x 16″ 3-roll and 18″ x 30″ 4-roll Granite Stone Mills. Kettles and tanks, iron, copper, aluminum and stainless. Dryers vac. & atmos. Jones automatic soap presses. Empire State foot presses. Soap frames. Slabbers and cutting tables, hand & power. Crutchers. Six-knife chipper. Filter presses 12″ x 42″. Wrapping & sealing machines. Powder, paste & liquid mixers. Rotex sifters. Filling machines, Grinders, Hammer mills. Colloid mills. Three-roll steel mills 8″ x 22″ to 16″ x 40″. Portable elec. agitators, pumps, etc. Send for bulletin. We buy your surplus equipment. Stein Equipment Company, 107—8th St. Brooklyn 15, N. Y. STerling 8-1944.

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First Machinery Moves: All departments under one roof. Executive offices, warehouse stock, rebuilding shops have all been placed in one location for the convenience of our customers. Now you can see a square city block filled with good equipment for your inspection. A greater FMC to serve you. First Machinery Corp., Fred R. Firstenberg, Pres., New address,—209-289 Tenth St., Brooklyn 15, N. Y. New phone: STerling 8-4672.

— ★ —

Herman A. Shelanski Dies

Dr. Herman A. Shelanski, 42, president and director of Industrial Toxicology Laboratories, Inc., Philadelphia, died suddenly at his home April 13. He had just returned home with Mrs. Shelanski, who had been ill, from a visit to the site of the new home they are building, when he dropped dead.

A well-known consultant on toxicology, and considered an expert on workmen's compensation cases, Dr. Shelanski served a number of concerns as special consultants. Among them were Colgate-Palmolive Co., Jersey City, N. J.; Hercules Powder Co., Wilmington, Del.; General Aniline & Film Corp., New York, and Smith, Kline & French Laboratories and John Wyeth Co., both of Philadelphia.

Dr. Shelanski was a graduate of the University of Pennsylvania.

He is survived by his widow, Bessie; a son, Michael Lee; a daughter, Amy Jane; his parents and two brothers.

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He can sell, he can co-ordinate, an excellent contact and liaison man, he has vision and integrity. If you have a position open among the above lines, if you have problems in *bulk, and small package markets, trends, research and product development, production, sales*—You ought to TAKE A LOOK AT THIS MAN.

We shall be glad to put him in touch with you.

BOX 185

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Water-Soluble Warfarin

Water soluble warfarin coated on silica has been registered by the Department of Agriculture for general use in the control of rats and mice, it was announced recently by Wisconsin Alumni Research Foundation, Madison, Wis. The product is designed for use in th preparation of warfarin water baits. It is commercially available from the Foundation's warfarin licensees: Prentiss Drug & Chemical Co. and S. B. Penick & Co., both of New York.

—★—

Garbage Can Enclosure

A new line of all steel garbage can enclosures for protection against weather, rust, vermin, and foraging neighborhood pets was announced recently by Bennett Manufacturing Co., Alden, N.Y. The twin enclosure features two top deposit swing doors on full-length, piano-type hinges. These doors can be fully opened to provide unobstructed depositing of garbage. The two front doors swing open 180° for easy removal and replacing of the cans, which slide in and out on runners protecting and reinforcing the bottom of the enclosure. Angle guide rails protect the sides and back of the unit which features a full partition to separate the two garbage cans.

The enclosure is of all-welded corrosion resisting steel construction, "Bonderized" inside and out, and finished with heavy coated, acid-proof enamel. It is 36¾ inches high, 47¼ inches long, and 22¼ inches deep.

—★—

Scovill Advances Baker

A. Schrader's Son Division of Scovill Manufacturing Co., Inc., Brooklyn, N.Y., aerosol valve firm, recently announced the appointment of Donald C. Baker as assistant manager of its Akron branch. Mr. Baker received his A.B. degree from the University of North Carolina, earned his master's degree in 1948 at Columbia University and joined Schrader the same year. He served for nearly five years during World War II, fighting with the 3rd Marine Regiment in Guadalcanal and Bougainville.

—★—

Alrose a Geigy Division

Alrose Chemical Co., Providence, R. I., was merged into its parent organization, Geigy Chemical Corp., New York, effective April 1, it was announced recently. It now operates as Alrose Chemical Co., Division of Geigy Chemical Corp.

—★—

Jameson Reports on Mexico

A. R. Jameson, president of Jameson Chemical Co., Chicago, returned recently from a combined business and pleasure tour of the Gulf states and Mexico. Mr. Jameson's report on the outlook for the firm's Mexican projects was optimistic.

New all-steel enclosure to protect garbage cans from weather, rust, vermin and foraging neighborhood pets was announced recently by Bennett Manufacturing Co., Alden, N. Y. Enclosure is of all-welded corrosion resisting steel construction.

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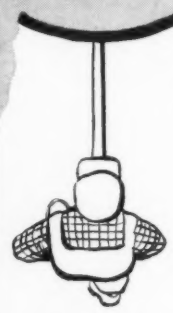

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Tale Ends

THE ten-year old Spurious Chemical Co. of Philadelphia, we have been informed via the grapevine, is about to float a bond issue through a N. Y. syndicate to build a new plant at Grapplers Gulch, Mo. According to its founder and president, Bayard Johnson, a new division will be formed to be known as the Whimsical Products Div. to operate the plant which will produce a new type of non-caking granular sulfuric acid for the paint, cement and cosmetic trades. The main product of Spurious to date has been a non-polishing floor wax of which the company has been the world's largest producer. Mr. Johnson also announced the appointment of C. L. Weirich as v. p. of Spurious effective July 1.

* * *

With coffee prices soaring and soap prices somewhat depressed you'd think soap makers would be rushing into the coffee racket. Not so, however, in fact, the reverse is true. A New Orleans coffee firm, Standard Coffee Co., recently added liquid soaps, disinfectants and water emulsion floor waxes to its line of coffee. The New Orleans enterpreneurs distribute coffee house to house. After adding a line of soaps and other chemical specialties, Standard decided to expand its operation to include bulk sales to sanitary supply jobbers.

* * *

John Rodda, U. S. Industrial Chemical's gift to American insecticides attended a meeting of the Sales Executives' Club in N.Y. last month and held the lucky number for one bottle "Peter Dawson Scotch". Inasmuch as U.S.I. is a wholly owned subsidiary of National Distillers, we wonder just what John did with that bottle. After all, fun is fun, but competition is still competition in the whiskey business. We mustn't forget to ask John what he did with it next time we see him.

* * *

Is "Tide" being perfumed with a new and more exotic fragrance? Stronger, too. New oriental smell could be "Breath of Singapore" or a "Night in Bali."

* * *

Household deodorants may include a element of potential danger, according to "The Chemical Age" of London. Some of these deodorants may contain "one constituent . . . a volatile substance that acts upon the nerves controlling the physical act of smell perception . . . ." We wonder if the man means ordinary formaldehyde. He doesn't say so, but he does say that when a person can't smell, he might be overcome by coal gas or something and never know it. Maybe unpleasant odors are useful after all, sort of like warning folks that there's a skunk in the neighborhood and they had better be careful. Also we note that our friends in England always write "unpleasant smells". They never use "stink".

* * *

Once upon a time, three horsemen met in Lexington, Ky. Their names were Doug Davis, Grant Dorland and Harry Trotsey. They decided to form a racing stable which they forthwith named DDT Stable. Not one whit daunted, they then chose as their stable slogan, "No flies on us!" Now it happens that one of the nags listed on the DDT Stable roster bears the fetching cognomen, "Night Boat." From the form he has shown so far, the horsemen are toying with the idea of changing his name,—at the same time to something more appropriate and fitting for a member of the DDT Stable. We have suggested "Pediculus" and "Cimex L." Additional suggestions may be sent at the sender's risk to Grant A. Dorland, Harp & Innis Pike, Lexington, Ky.

* * *

Add appropriately situated companies: Indianapolis Brush & Broom Mfg. Co. . . . corner of Brush and Broom Sts., Indianapolis 7.

* * *

New use for scouring powder,—to track down criminals. A lady in Dallas, Tex. had her hotel room robbed on several occasions. She suspected an inside job. So she sprinkled scouring powder plentifully on the mat inside her door, locked up and departed. Upon her return, the dirty dog had done it again. But, this time, they tracked him down by his foot-prints done neatly in scouring powder. "Just as I suspected," said the lady sleuth, "the hotel porter." When shown his scouring powder foot prints, he confessed just like they do on TV. Any scouring powder manufacturer finding business somewhat dull right now might add this new use on his label and try a shot or two in the detective magazines.

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